CONTENTS

TRADE NAME	MODEL	SET AND FOLDER No.
Admiral	16M12 (Ch. 21X1), 27M12 (Ch. 21X2) Tel. Rec. Prod. Chg. Bul. 62	196-1
Airline	25WG-1573A	196-2
General Electric	17T10, 21T2 Tel. Rec.	196-3
Jewel	5205	196-4
Masco	MB-8N	196-5
Motorola	TC-101, B UHF Conv.	196-6
Motorola	62CW1 (Ch. HS-324)	196-7
Newcomb	A-104R	196-8
Olympic	17C44, 17K41, 42, 50, 17T40, 48 (Ch. TK17), 20C45, 52, 53, 20D49, 20K43, 51, 20T46, 47 (Ch. TL20) Tel. Rec.	196-9
Packard-Bell	2621, 2622 (Ch. 2621-2) Tel. Rec.	196-10
Philco	53-T1883, 53-T1884, 53-T1886, L, 53-T2183 (Ch. 44 & G4) Tel. Rec.	196-11
Philco	53-563	196-12
RCA Victor	2-R-51, 2-R-52 (Ch. RC1119)	196-13
Silvertone	2009, 2010, 2011, 2012, 2013 (Ch. 132.022)	196-14
Silvertone	2014, 2015, 2016 (Ch. 132.021)	196-15
Truetone	D2226	196-16

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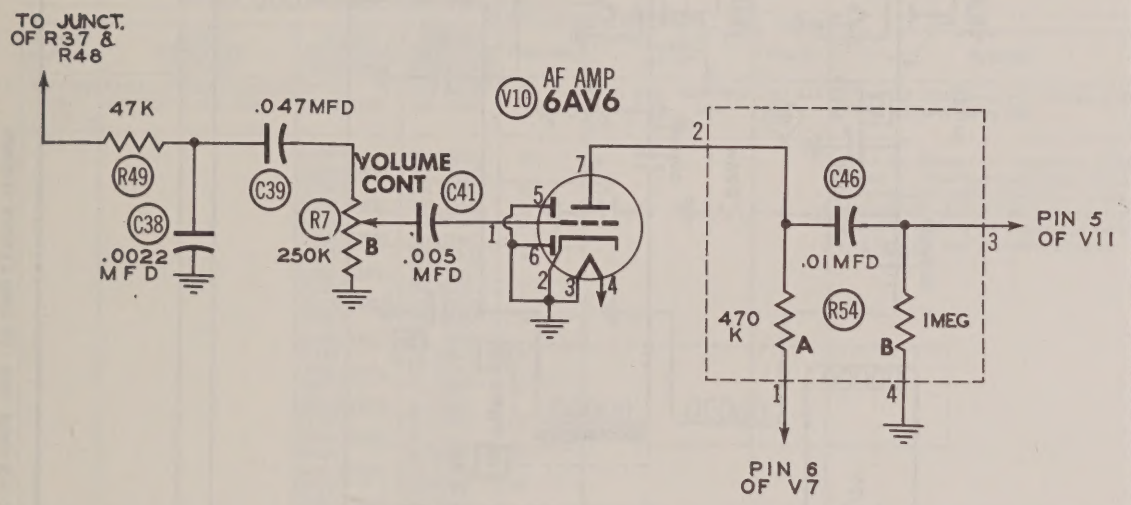
SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 2 IN SET 177

Admiral chassis 21X1 used in Model 16M12 and chassis 21X2 used in Model 27M12 are similar to chassis 21W1 covered in Photofact Folder 2 in Set 177 except for the following:

The AM Tuner and its associated switching circuits are omitted in chassis 21X1 and 21X2.

The Volume Control, R7B, was changed to a 250KΩ untapped control and C40, C43, C44, R53 and the Tone Control, R6, are omitted. The diodes (pins 5 and 6) of V10 are returned to ground in the revised circuit. The audio amplifier plate load resistors R54A and B are replaced by a single 470KΩ resistor. This resistor is connected to 310V at pin 6 of the AGC keying tube (V7) instead of to 245V. C47, parasitic suppressor capacitor, was changed to .01MFD. A partial schematic of the revised audio amp. circuit is given below.



A PM focus assembly and EM speaker are used in Ch. 21X1 and 21X2. The speaker field is used as the Filter Choke in the low voltage supply in these chassis in lieu of the focus coil.

A partial schematic of the revised low voltage supply is given on page 3.

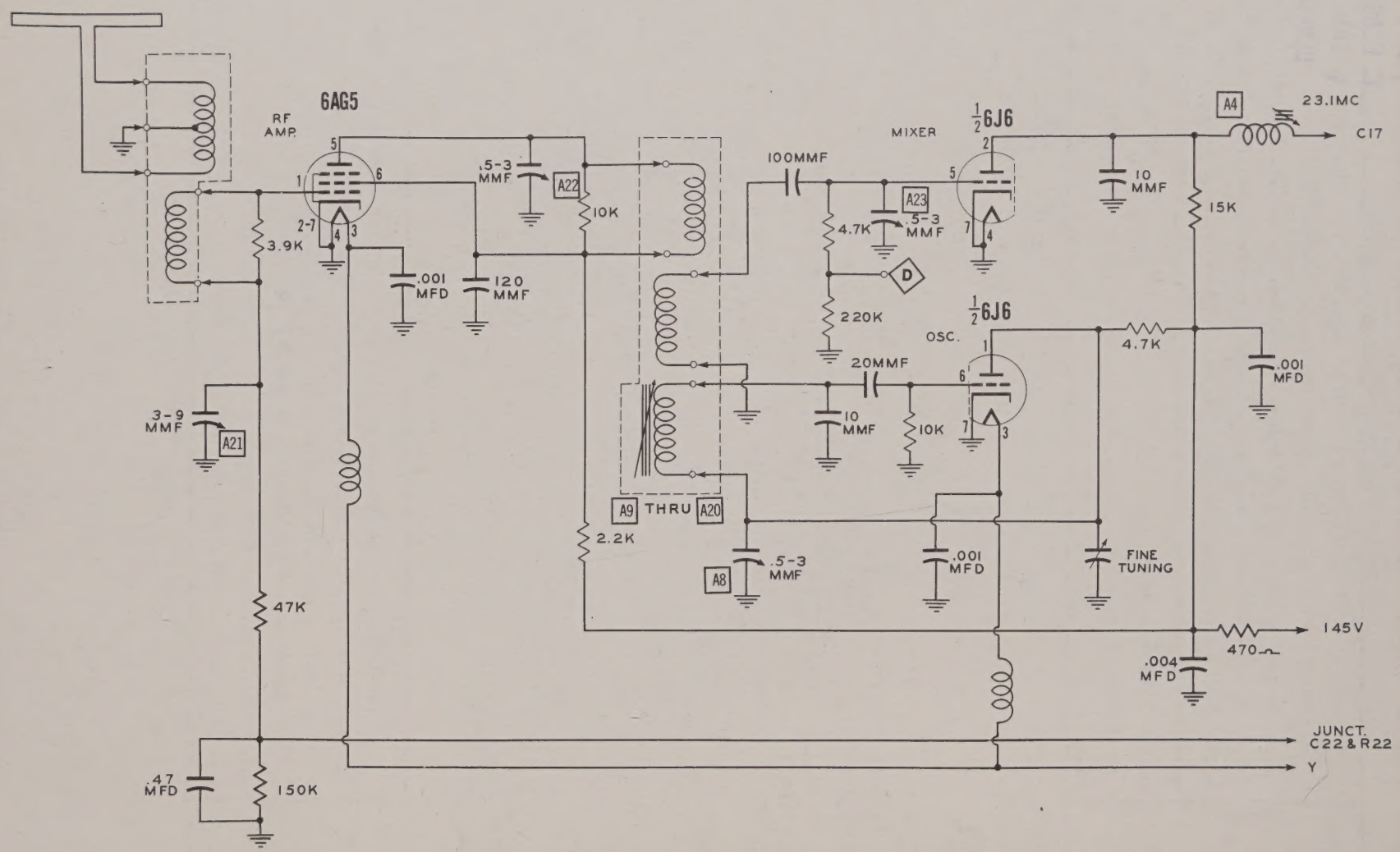
A pentode type tuner (part #94C18-4) is used in chassis 21X1 and 21X2. A schematic of this tuner is given on the reverse side. Alignment instructions are given on page 3. A 6BC5 or 6CB6 tube may also be used in place of the 6AG5, RF Amp., which is shown in the schematic.

(Continued on Reverse Side)

ADMIRAL MODELS 16M12 (Ch. 21X1), 27M12 (Ch. 21X2)

PRODUCTION CHANGES
BULLETIN 62

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



(Continued on next page)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary. If the oscillator seems to be off-frequency for a majority of the channels it may be possible to correct them in one step, using A8. It should be noted that this is an all-channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A8 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off-frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

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	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp to point (A). Low side to chassis.	A9	Adjust to place sound marker as shown in Figure 1. The video marker should be at 50%.
			270MC (10MC SWP)	205.25MC 209.75MC	12		A10	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A11	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A12	
			189MC 10MC SWP)	187.25MC 191.75MC	9		A13	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A14	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A15	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A16	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A17	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A18	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A19	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A20	

RF AND MIXER ALIGNMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to point (D). Low side to chassis.	A21, A22 A23	Adjust for response curve similar to Figure 5 with markers above 90%.
8.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check all channels for response similar to Figure 2. If markers fall below 70% on any channel make slight adjustments of A21, A22 and A23 with channel switch set for that channel. Recheck all channels to see that they have not been seriously effected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC 10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

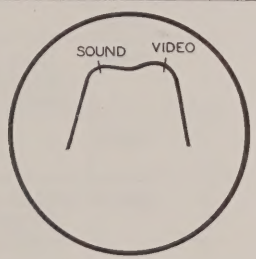


FIG.2

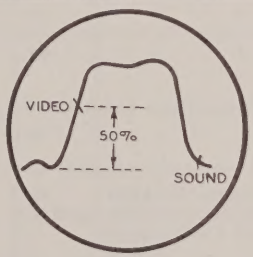
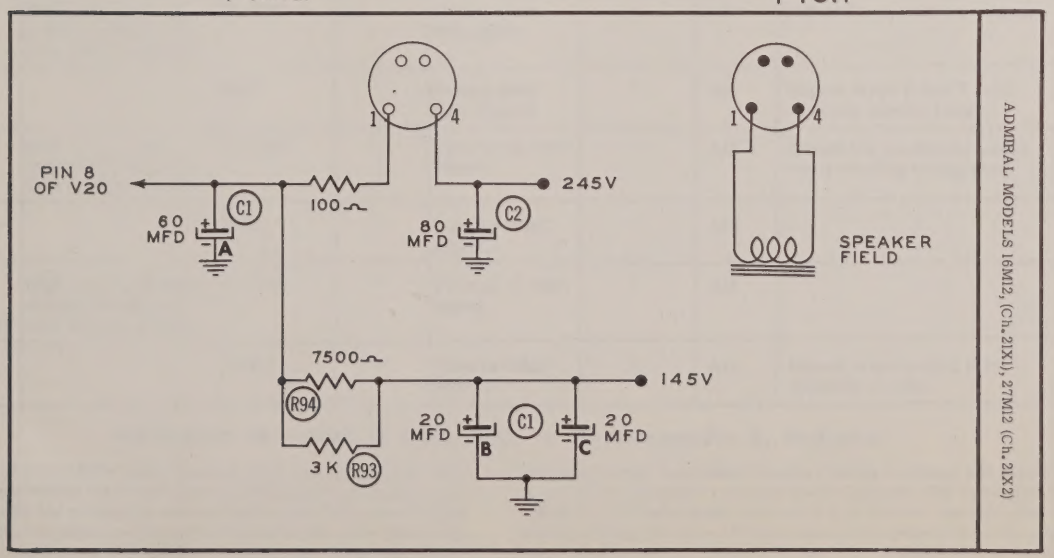
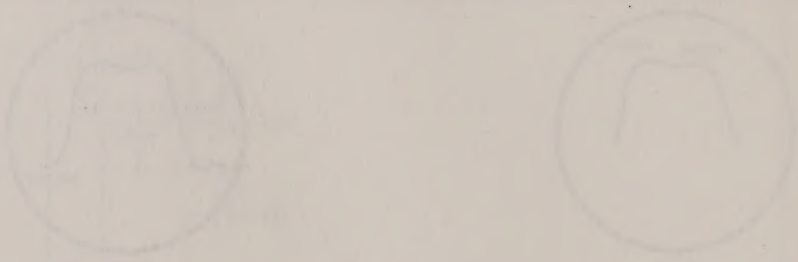


FIG.1





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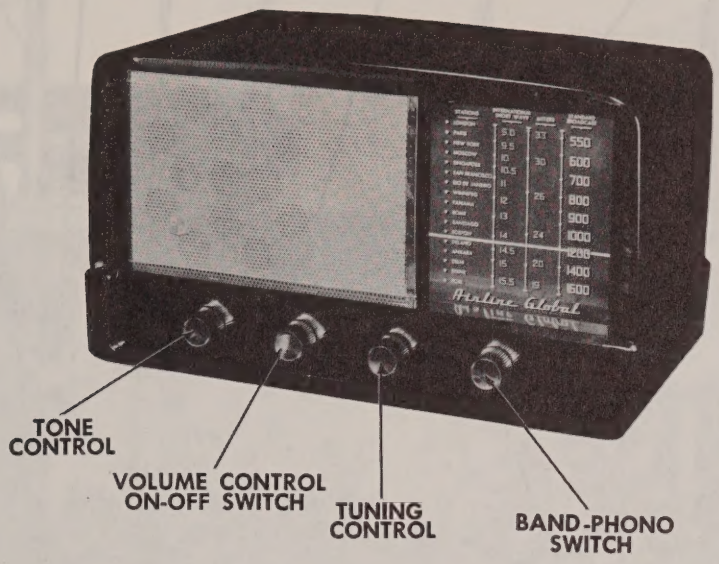
AIRLINE
MODEL 25WG-1573A



TRADE NAME	Airline Model 25WG-1573A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Avenue, Chicago, Illinois
TYPE SET	AC Operated 2 Band AM Superheterodyne Receiver
TUBES (Six)	Types 6BA6 RF Amp., 6BE6 Conv., 6BA6 IF Amp., 6AV6 Det.-AVC-AF Amp., 6V6GT Audio Output, 6X5GT Rectifier.

POWER SUPPLY 110-120 Volts AC - 60 Cycle — RATING .28 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST 540-1600 KC — SHORT WAVE 9-15.6 MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 6BE6 (V2). Low side to chassis.	455KC (400~Mod.)	BC	Tuning gang fully open.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output.
2.	"	"	1620KC	"	"	"	A5	"
3.	"	High side to pin 1 (grid) of 6BA6 (V1). Low side to chassis.	1400KC	"	Tune to 1400KC signal.	"	A6	"
4.	"	"	600KC	"	Tune to 600KC signal.	"	A7	"
5.	50MMF	High side to external antenna terminal. Low side to chassis.	1400KC	"	Tune to 1400KC signal.	"	A8 (on loop)	Adjust for maximum output. Set pointer to 1400 on dial. Repeat steps 2 thru 5 for optimum results.
6.	.1MFD	High side to pin 7 (grid) of 6BE6 (V2). Low side to chassis.	15.7MC	SW	Tuning gang fully open.	"	A9	Adjust for maximum output.
7.	"	"	9MC	"	Tuning gang fully closed.	"	A10	Repeat steps 6 and 7 until receiver covers range.
8.	"	High side to pin 1 (grid) of 6BA6 (V1). Low side to chassis.	14.5MC	"	Tune to 14.5MC signal.	"	A11	Adjust for maximum output while rocking tuning gang.
9.	"	"	10MC	"	Tune to 10MC signal.	"	A12	"
10.	400Ω carbon resistor	High side to external antenna terminal. Low side to chassis.	14.5MC	"	Tune to 14.5MC signal.	"	A13	"
11.	"	"	10MC	"	Tune to 10MC signal.	"	A14	Repeat steps 6 thru 11 for optimum results.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amplifier	6BA6	6BA6	7BK	
V4	Det-AVC-AF Amp.	6AV6	6AV6	7BT	
V5	Audio Output	6V6GT	6V6GT	7S	
V6	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▰60	250	45X400	AFH3-171		C134		FP419.7	TVL-3640	
B	■40	200								
C	▲20	25								
C2	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C3	10000		47X595	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C4	500			SI500	D6-501	TM5T5	GP2K-501	UC-535	5GA-T5	
C5	500			SI500	D6-501	TM5T5	GP2K-501	UC-535	5GA-T5	
C6	47	500	47X565	1469-00005		5R5Q5			MS-45	
C7	7		47X610				N750K-070			
C8	.0033	200	47X427	P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	5HK-D33	
C9	.01	200	B66103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C10	.05	200	B66503	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C11	10000		47X595	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C12A	50		47X112	SI50	D6-500	TM5Q5	GP1K-500	UC-545	5GA-Q5	
B	50			SI50	D6-500	TM5Q5	GP1K-500	UC-545	5GA-Q5	
C13	.05	200	B66503	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C14	68	500	47X471	1468-00007	D6-680	5W5Q7	GP1K-680	UC-5468	1FM-47	
C15	.005	400	H66502	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C16A	.01									
B	250		♦76X5		♦PC-80		♦1404-01		♦102C1	
C										
C17	.01	200	B66103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C18	.02	200	B66203	P488-02	DF-203	PTE4S2		PT412	2TM-S2	
C19	.005	800	D66502	P1088-005		PTE16D5		PT1625	MB-D5	

♦ Items C16A, C16B, C16C, R17A and R17B are combined in one unit.

CONTROLS

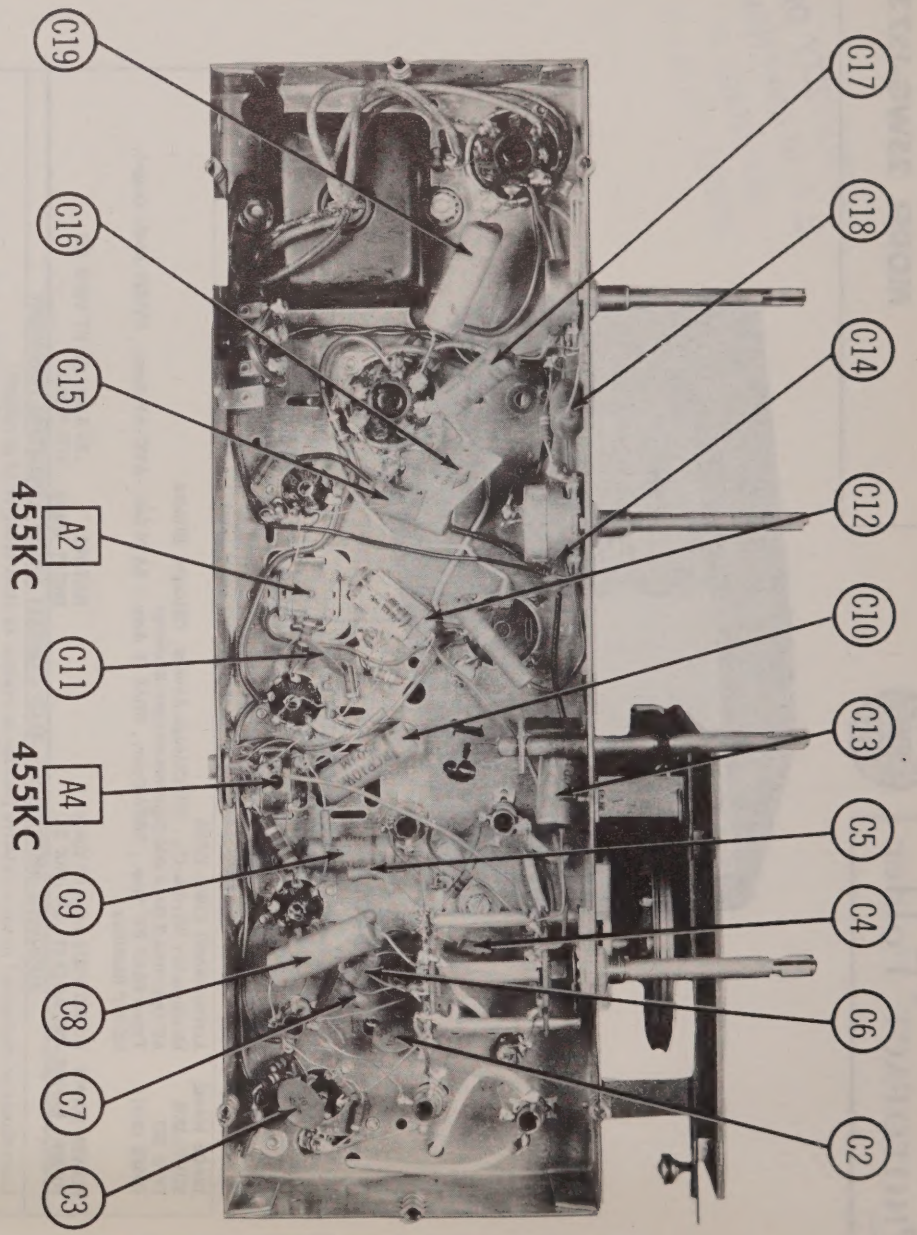
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	36X385	Q13-133X	AT-92	ABT-66	UT-427	Volume -- Tapped @ 75KΩ.
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A.
C	Switch		Not Req.	76-1	SW-A	KB-1	US-26	Attach to R1A.
R2A	1Meg	½	40X343	Q11-137	AG-61-S	AB-69	U-54	Tone
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A.

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	NOTES
R3	2.2Meg	½	B85225	BTS-2.2Meg	
R4	150Ω	½	B85151	BTS-150	
R5	68KΩ	½	B84683	BTS-68K	
R6	20KΩ	½	B84203		
R7	2.2Meg	½	B85225	BTS-2.2Meg	
R8	22KΩ	½	B85223	BTS-22K	
R9	8200Ω	1	C84822	BTA-8200	
R10	10Ω	½	B85100		
R11	2.2Meg	½	B85225	BTS-2.2Meg	
R12	150Ω	½	B85151	BTS-150	
R13	47KΩ	½	B84473	BTS-47K	
R14	47KΩ	½	B84473	BTS-47K	
R15	470KΩ	½	B84474	BTS-470K	
R16	10Meg	½	B85106	BTS-10Meg	
R17A	500KΩ	½	♦76X5		
B	500KΩ	½			
R18	300Ω	½	B84301		
R19	15KΩ	½	B84153	BTS-15K	
R20	1200Ω	2	D84122	BTB-1200	

♦ Items R17A, R17B, C16A, C16B and C16C are combined in one unit.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117V @ .28A	370VCT .047ADC	6.3V @ 2.3A		53X327				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	6.5KΩ	3.8Ω	440Ω	.7Ω	51X152	A-3877	A-2931	R0-9	S-3X	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	AIRLINE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	6"	PM	3.8Ω	C-12A509	ST-108 Mod P6-X	6A1	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	AIRLINE PART No.	MERIT PART No.	
L1	Loop Antenna	.1Ω	1.6Ω	9A2265		
L2	SW Ant. Coil	.1Ω	.2Ω	9A2268		
L3	BC RF Coil	5.9Ω		9A2264		Tapped @ 3Ω
L4	SW RF Coil	.2Ω		9A2267		Tapped @ .1Ω
L5	BC Osc. Coil	.4Ω	6Ω	9A2263		
L6	SW Osc. Coil	.1Ω	.2Ω	9A2266		
L7	Input IF	14.5Ω	15Ω	9A2108	BC-352	
L8	Output IF	12Ω	14Ω	9A2063	BC-353	

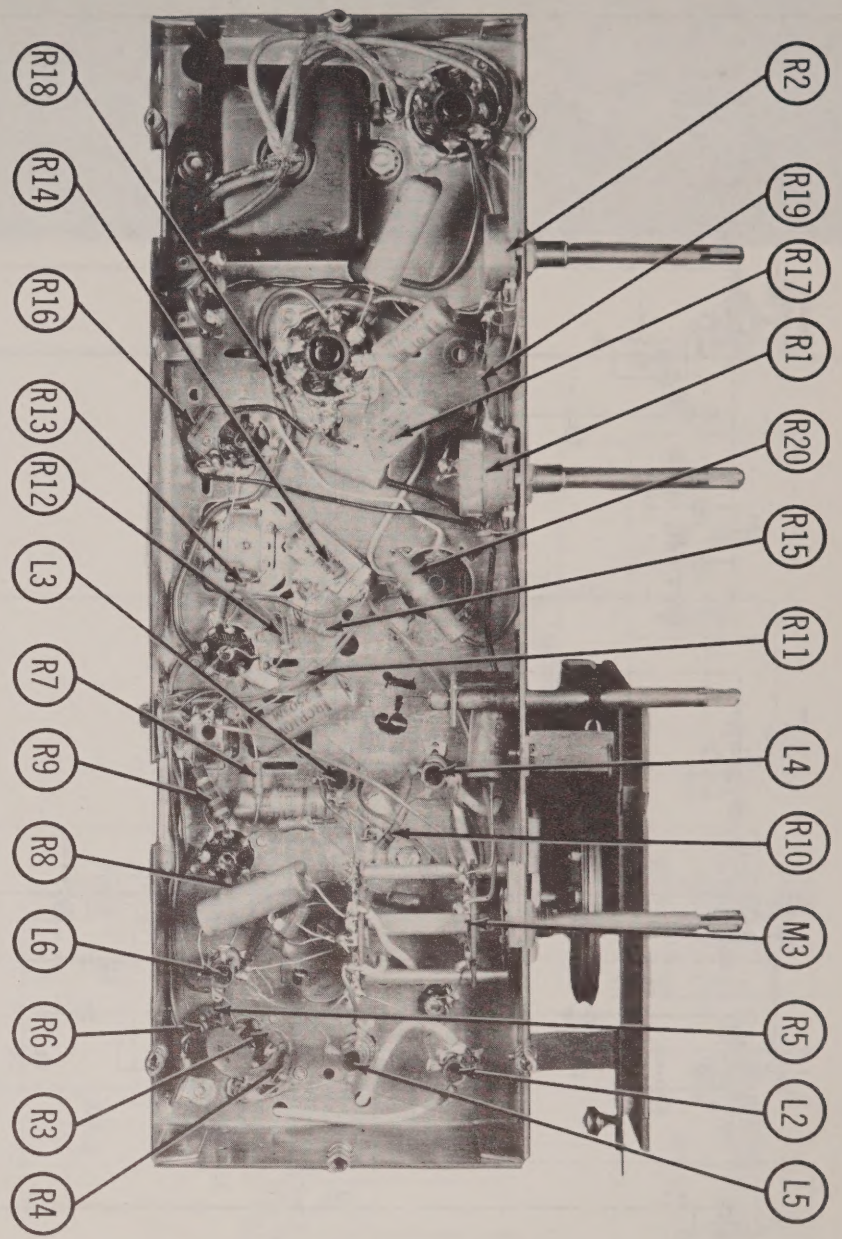
DIAL LIGHTS

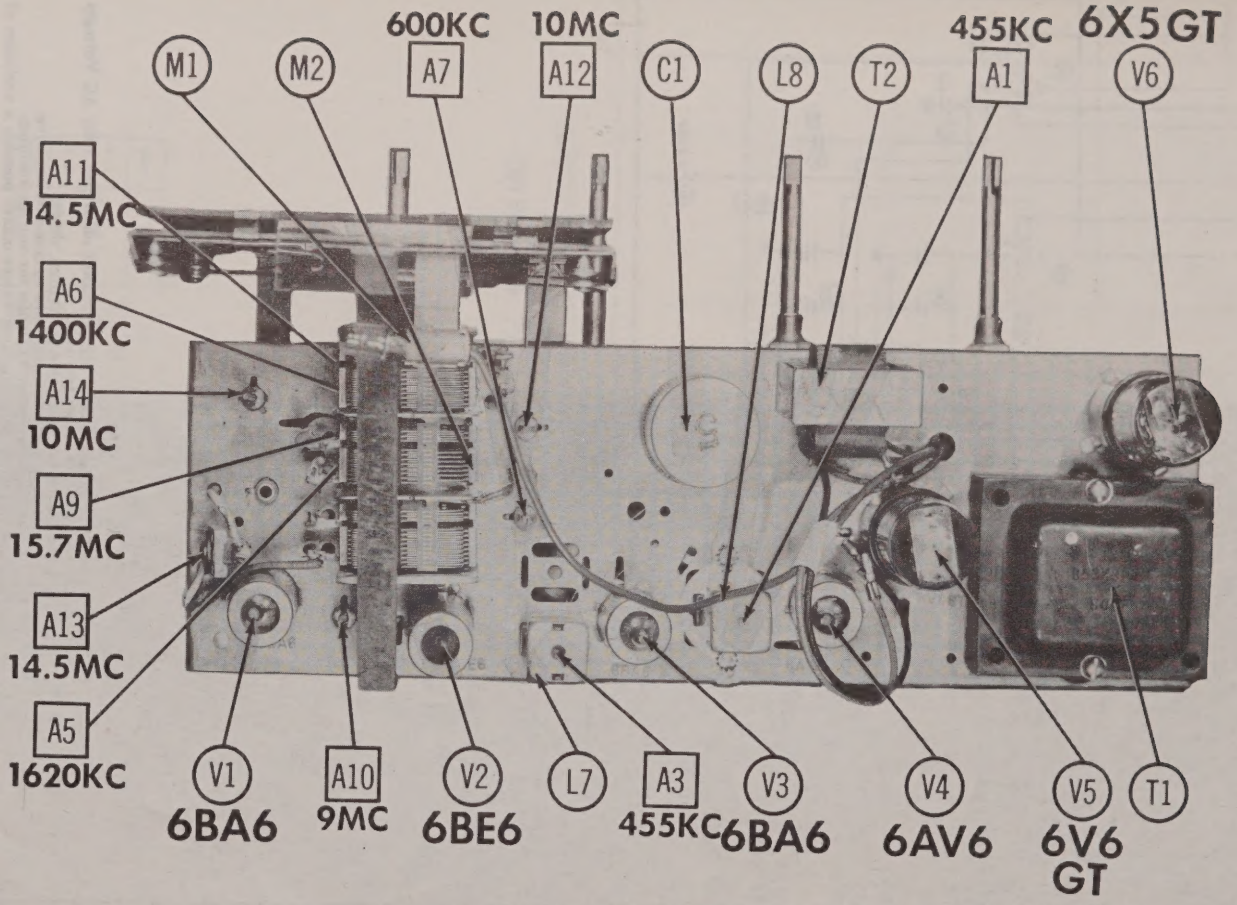
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AIRLINE PART No.		
M1	Bayonet	6-8	.15	Brown	7A103		Type No. 47.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M2	Tuning Capacitor	14A220	20-330MMF, 20-330MMF, 16-146MMF, (BC Sections) 20-80MMF, 20-80MMF, 20-80MMF, (SW Sections)
M3	Switch	2A422	Band Selector.
A13	Trimmer Capacitor	17A265	SW RF Adj. (2.5-30MMF)
	Cabinet	55X428	Black
	Knob	10A802	4 Used

CHASSIS—BOTTOM VIEW




M1
M2
600KC
A7
10MC
A12
C1
L8
T2
455KC
A1
6X5GT
V6
A11
14.5MC
A6
1400KC
A14
10MC
A9
15.7MC
A13
14.5MC
A5
1620KC
V1
6BA6
A10
9MC
V2
6BE6
L7
A3
455KC
V3
6BA6
V4
6AV6
V5
6V6 GT
T1

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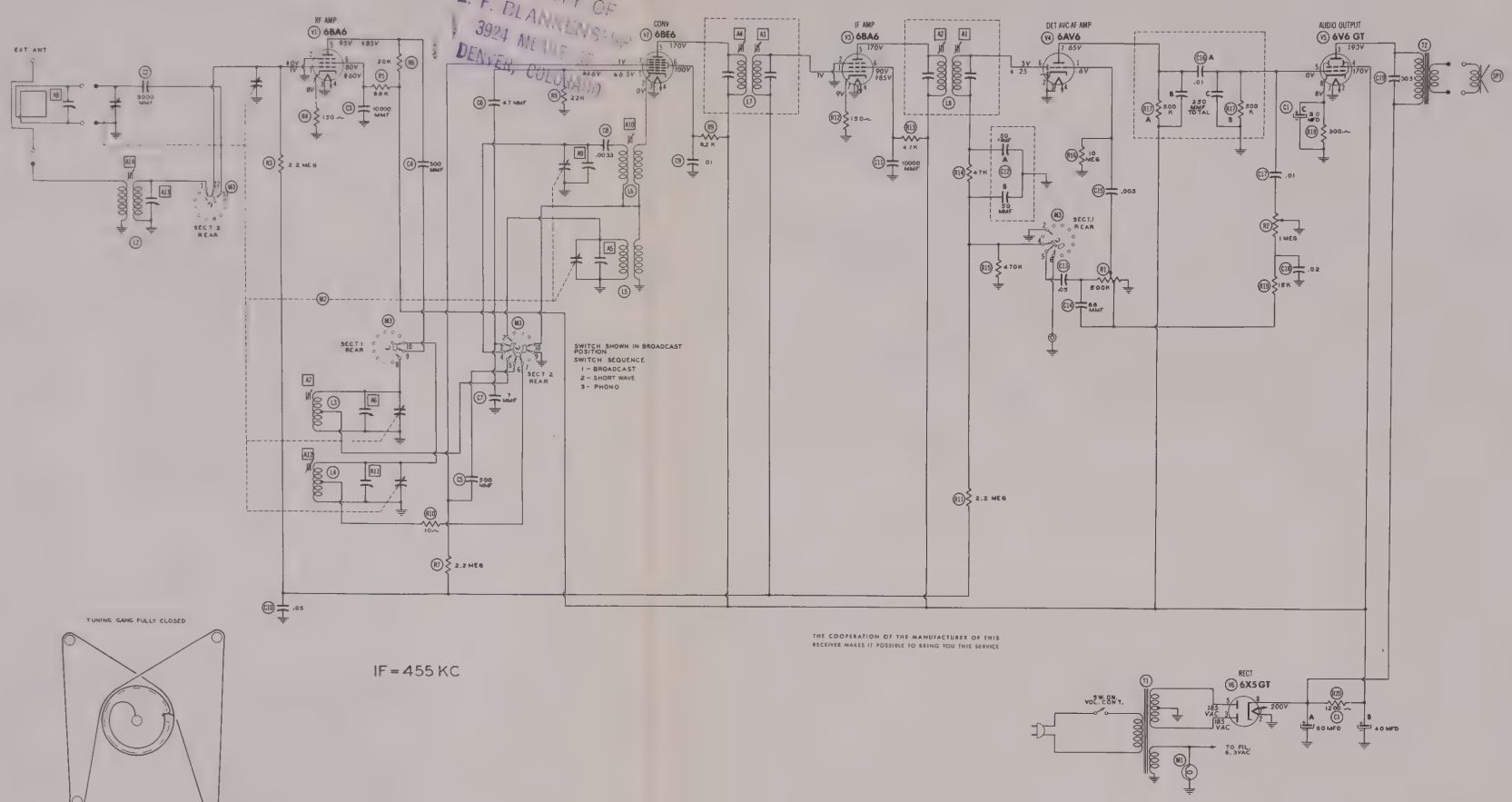

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	4.9Meg ♦.2Ω	0Ω	0Ω	.1Ω	† 21.2KΩ	†70KΩ	150Ω	
V 2	6BE6	22KΩ	.8Ω ♦.2Ω	0Ω	.1Ω	† 1.2KΩ	† 9.4KΩ	4.9Meg ♦3.3Meg	
V 3	6BA6	2.7Meg ♦1.2Meg	0Ω	0Ω	.1Ω	† 1.2KΩ	†48KΩ	150Ω	
V 4	6AV6	10Meg	0Ω	0Ω	.1Ω	0Ω	500KΩ	†500KΩ	
V 5	6B6GT	INF	.1Ω	† 440Ω	† 1.2KΩ	500KΩ	INF	0Ω	300Ω
V 6	6X5GT	INF	0Ω	124Ω	INF	113Ω	INF	.1Ω	260KΩ

ALL MEASUREMENTS TAKEN IN "B" POSITION UNLESS OTHERWISE SPECIFIED
♦ MEASURED IN "SHORTWAVE" POSITION.
▲ TAKEN WITH VACUUM TUBE VOLTMETER.
† MEASURED FROM PIN 8 OF V6.

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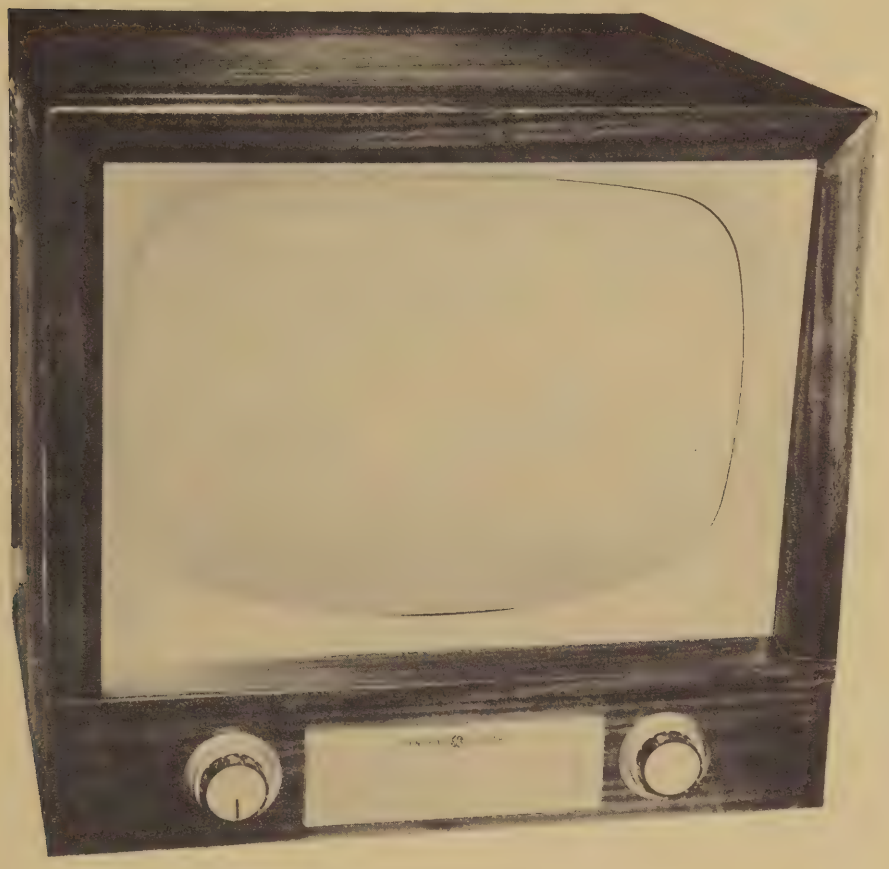

MODEL 21T2

GENERAL ELECTRIC
MODELS 17T10, 21T2

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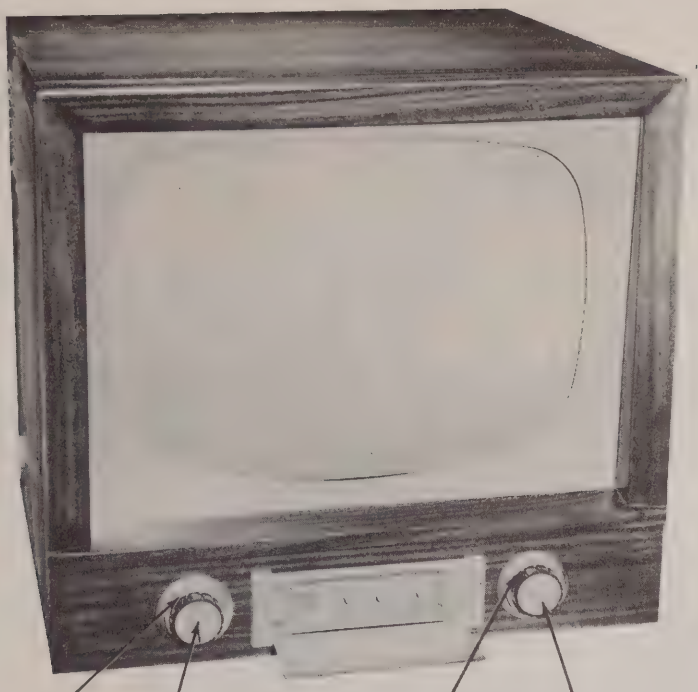

GENERAL ELECTRIC
MODELS 17T10, 21T2

GENERAL ELECTRIC 21T2

TRADE NAME	General Electric Models 17T10, 21T2
MANUFACTURER	General Electric Co., Electronics Dept., Electronics Park, Syracuse, New York
TYPE SET	Television Receiver
TUBES	Twenty-One
POWER SUPPLY	110-120 Volts AC - 60 Cycle — RATING 1.7 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 45.75MC Sound IF 41.25MC (Intercarrier)

INDEX

Alignment Instructions 6,7
Disassembly Instructions 18
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions ..... 13 thru 16
Photographs
Cabinet - Rear View 11
Capacitor Identification 4, 9
Chassis - Top View 3
Inductor and Alignment Identification 19, 20
Photographs
RF Tuner 10
Resistor Identification 12, 17
Resistance Measurements 8
Servicing in the Field 18
Schematic 2
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

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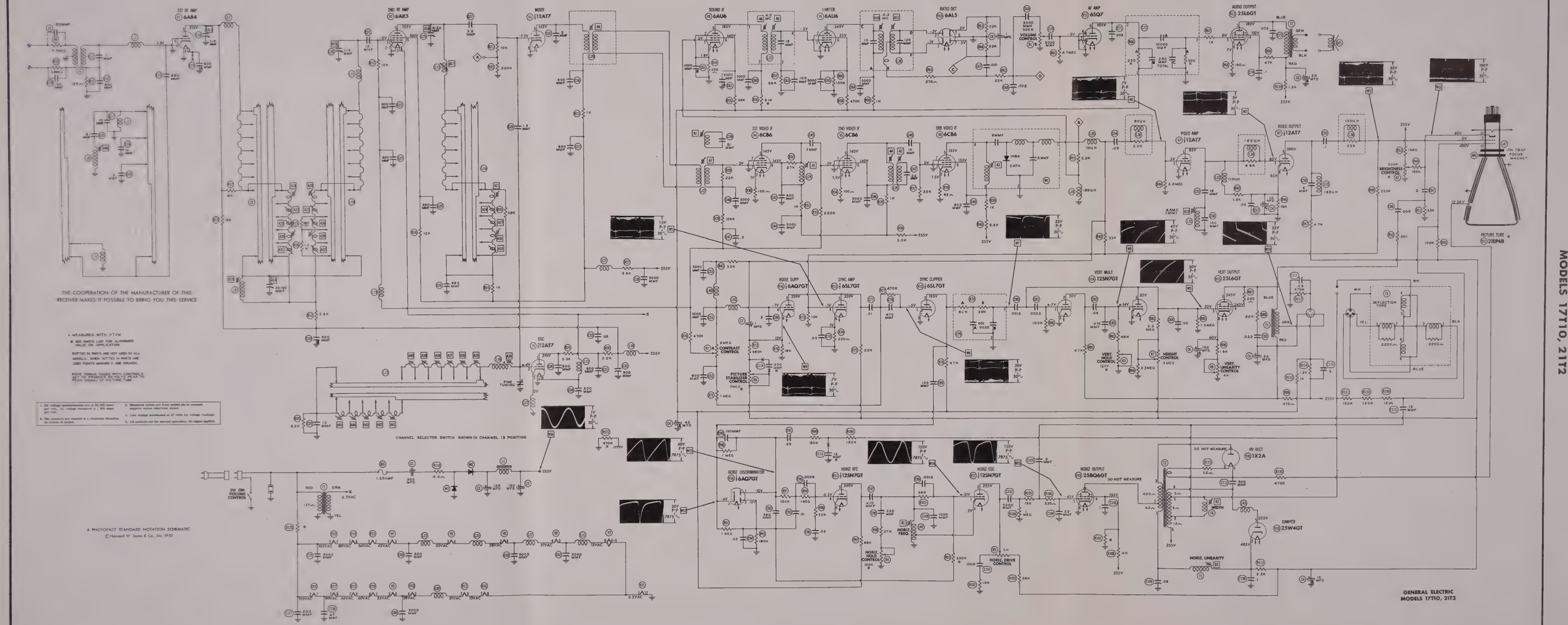
1ST RF AMP V1 6AB4
2ND RF AMP V2 6AK5
MIXER V3 12AT7
OSC V4 12AT7
SOUND IF V5 6AU6
LIMITER V6 6AU6
RATIO DET V10 6AL5
AF AMP V11 6SQ7
AUDIO OUTPUT V12 25L6GT
1ST VIDEO IF V6 6CB6
2ND VIDEO IF V7 6CB6
3RD VIDEO IF V8 6CB6
VIDEO AMP V7 12AT7
VIDEO OUTPUT V7 12AT7
NOISE SUPP V16 6AQ7GT
SYNC AMP V13 6SL7GT
SYNC CLIPPER V13 6SL7GT
VERT MULT V14 12SN7GT
VERT OUTPUT V15 25L6GT
HORIZ DISCRIMINATOR V9 6AQ7GT
HORIZ AFC V12 12SN7GT
HORIZ OSC V17 12SN7GT
HORIZ OUTPUT V18 25BQ6GT
HV RECT V20 1X2A
DAMPER V19 25W4GT
PICTURE TUBE V21 21EP4B
VOLUME CONTROL
CONTRAST CONTROL
PICTURE STABILIZER CONTROL
FINE TUNING
BRIGHTNESS CONTROL
HEIGHT CONTROL
VERT. HOLD CONTROL
VERT. LINEARITY CONTROL
HORIZ. FREQ.
HORIZ. HOLD CONTROL
HORIZ. DRIVE CONTROL
HORIZ. WIDTH
HORIZ. LINEARITY
DEFLECTION YOKE
ION TRAP FOCUS MAGNET
SW. ON VOLUME CONTROL
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
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GENERAL ELECTRIC MODELS 17T10, 21T2

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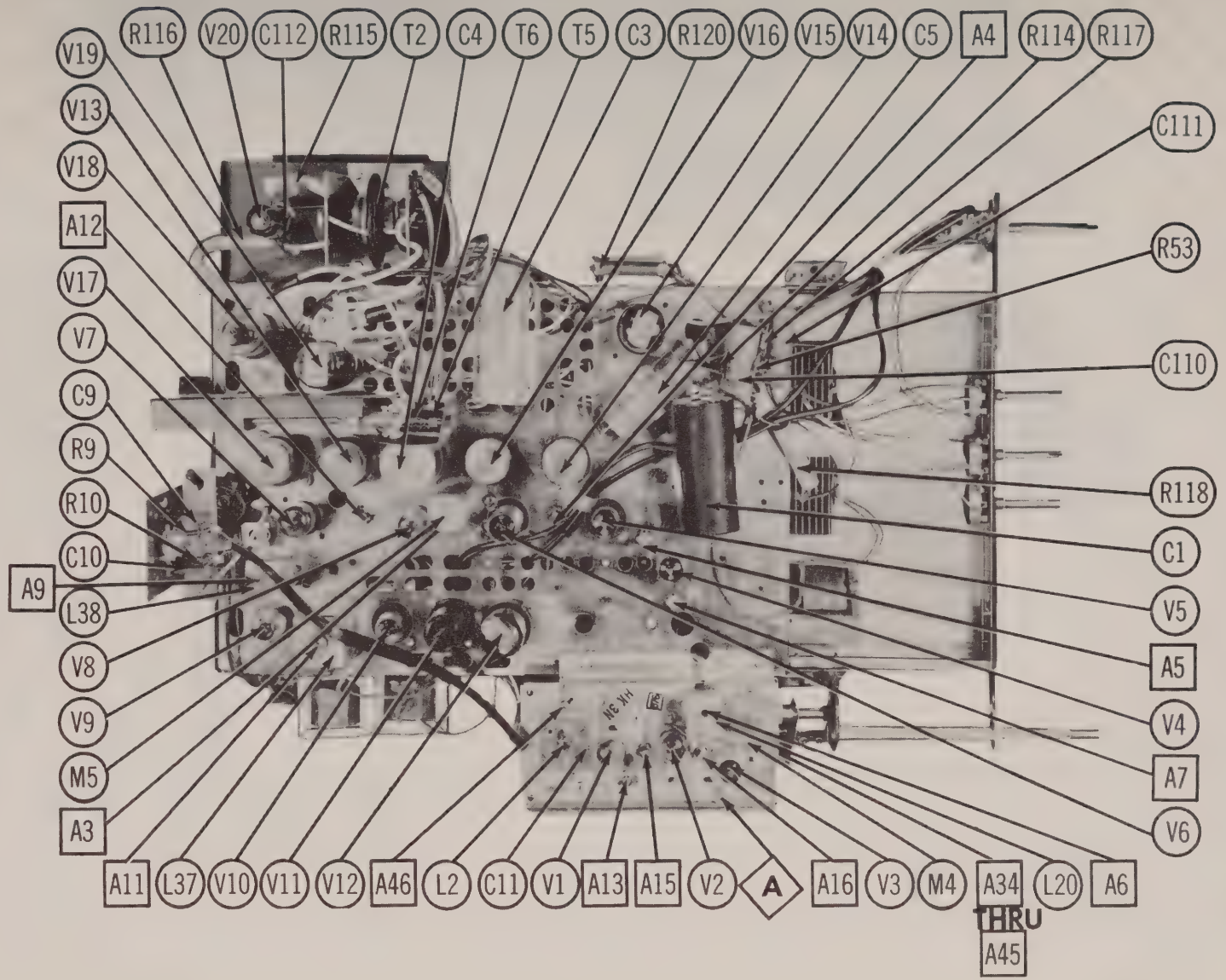
MODELS 17T10, 21T2



CHASSIS TOP VIEW

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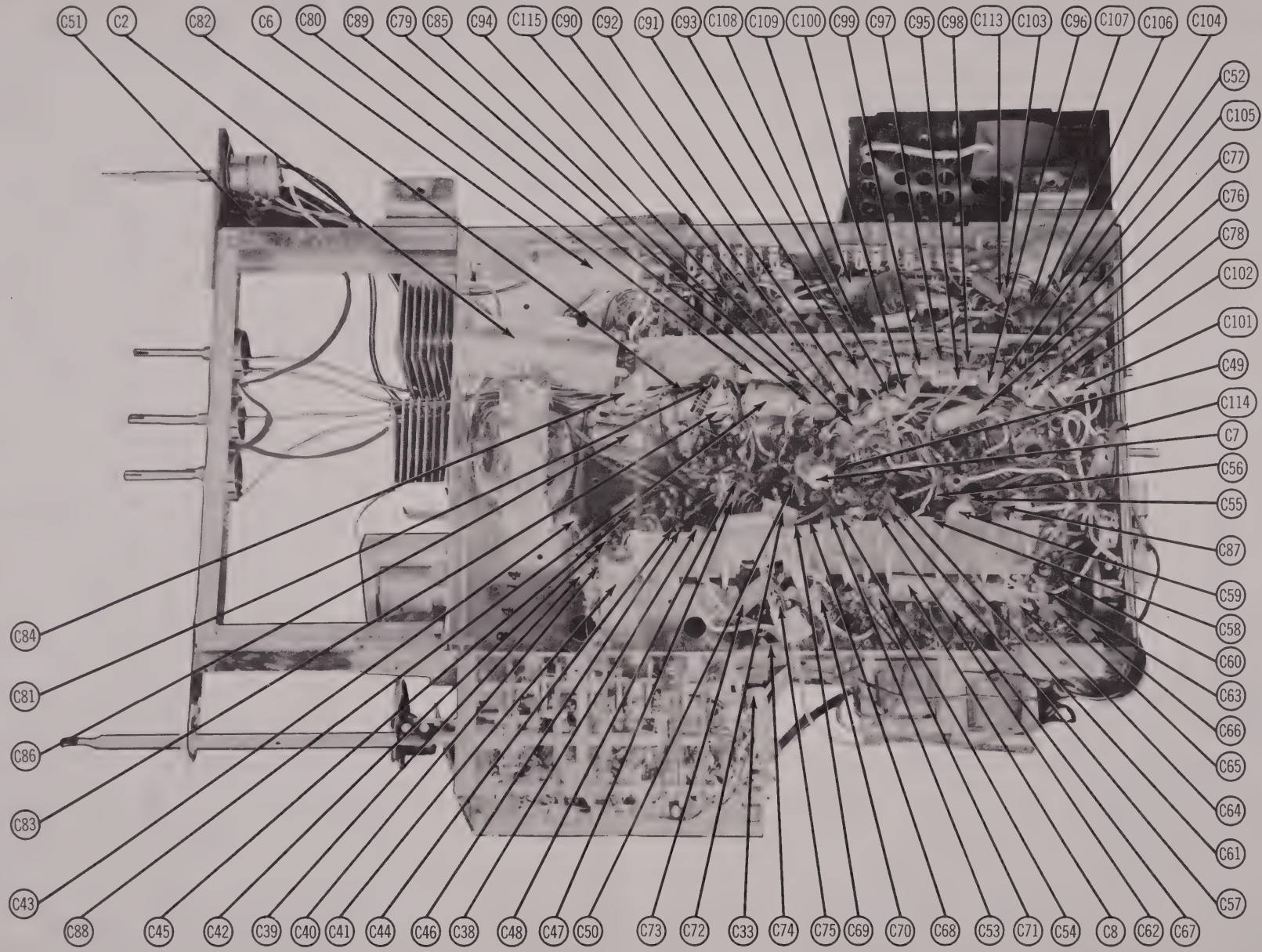

CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

TUBE PLACEMENT CHART

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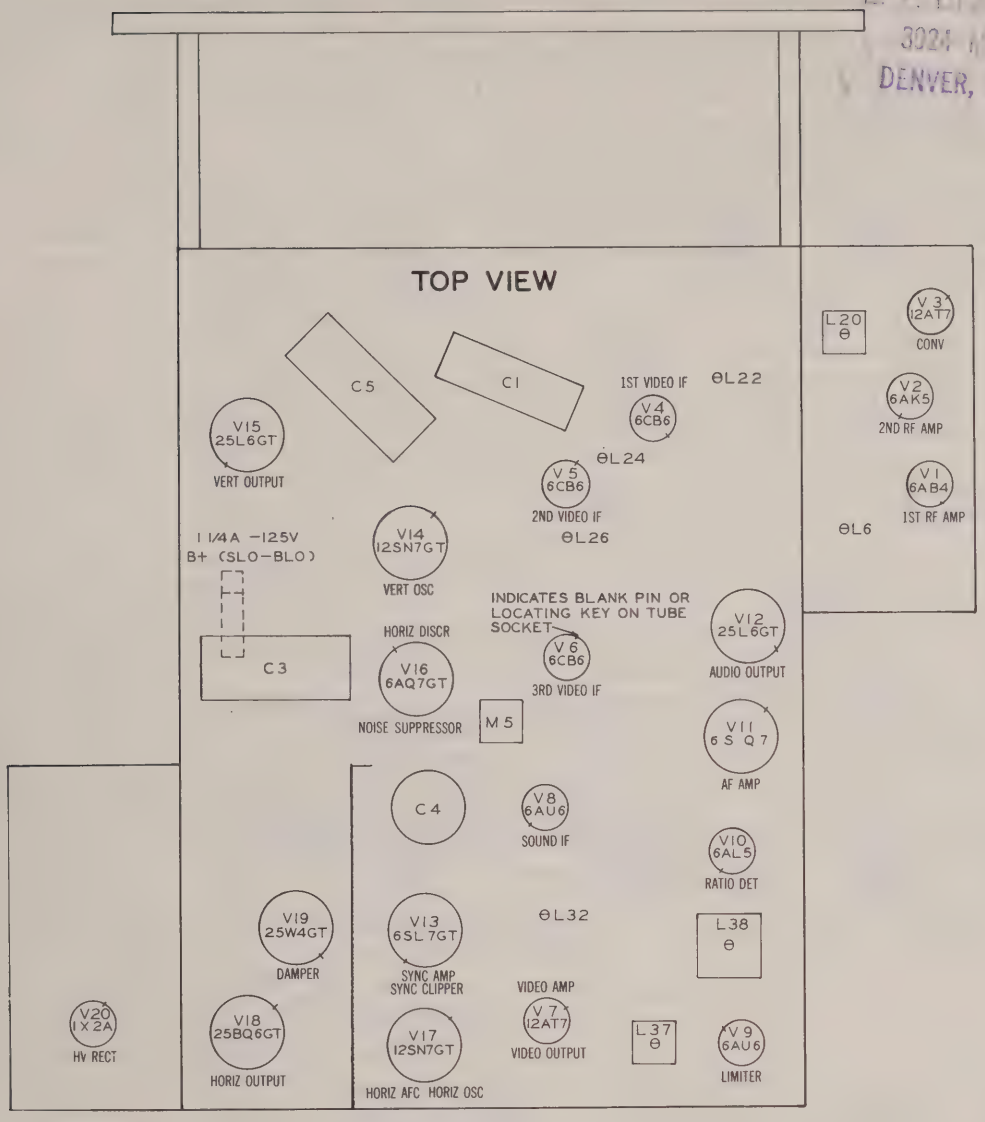


TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - Selenium Rectifier's (M1, M2) Fuse (M3)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6
No pic, no sound, has snow - V1, V2, V3, V4
No pic, has sound, has raster - V7, V21
Has pic, no sound - V8, V9, V10, V11, V12

SYNC FAILURE
No vert. sync - V13, V14
No horiz. sync - V13, V16, V17
No Vert. or Horiz. sync - V13, V16

SWEEP FAILURE
No raster, has sound - V17, V18, V19, V20, V21
No vertical deflection - V14, V15
Poor vert. linearity or foldover - V14, V15
Poor horiz. linearity or foldover - V17, V18, V19
Narrow picture - V17, V18, V19, V20, M1, M2
Vert. off freq. - V13, V14
Horiz. off freq. - V13, V16, V17

NOTE: Since this receiver employs tubes whose filaments are connected in a series-parallel network, an open filament in any tube in series may cause the set to be inoperative.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.
Use an isolation transformer to protect the test equipment.

VIDEO IF ALIGNMENT

Connect the negative lead of a bias battery to the junction of C52, R71 and the contrast control.
Connect the positive lead to chassis and adjust the contrast control to obtain -3 volts on VTVM at pin 1 (Grid) of V4. Disconnect VTVM after this adjustment.
Turn picture stabilizer control fully counter clockwise.
Set channel switch to channel 11 and turn the fine tuning control fully counter clockwise.
During alignment it is necessary to detune the IF coils by shorting as noted, to prevent preceding coils from affecting the response curve.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	100MMF	High side to point (A). Low side to tuner chassis.	45MC (10MC SWP)	47.25MC	11	Vert. amp. thru 10KΩ to point (B). Low side to chassis.	A1, A2	Adjust for MINIMUM response at 47.25MC.
2.	.01MFD	High side to pin 1 (grid) of 6CB6 (V6). Low side to chassis.	"	42.50MC 44.10MC 45.75MC	"	"	A3	Short across L26. Adjust for response curve similar to Figure 1. Remove short from L26.
3.	"	High side to pin 1 (grid) of 6CB6 (V5). Low side to chassis.	"	41.25MC 42.50MC 45.00MC 45.75MC	"	"	A4	Short across L24. Adjust for response curve similar to Figure 2. Remove short from L24.
4.	"	High side to pin 1 (grid) of 6CB6 (V4). Low side to chassis.	"	41.25MC 42.50MC 45.00MC 45.75MC 47.25MC	"	"	A5	Adjust for response curve similar to Figure 3.
5.	100MMF	High side to point (A). Low side to tuner chassis.	"	"	"	"	A6, A7, A3	Adjust for response curve similar to Figure 4. If necessary, retouch A3, A4 and A5 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.01MFD	High side to pin 1 (grid) of 6AU6 (V8). Low side to chassis.	4.5MC (UNMOD)	Any non-interfering channel.	DC probe to point (C). Common to chassis.	A8, A9, A10	Adjust for maximum deflection.
7.	"	"	"	"	DC probe to point (D). Common to chassis.	A11	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	.01MFD	High side to pin 1 (grid) of 6AU6 (V8). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any non-interfering channel.	Vert. amp. thru 10KΩ to point (C). Low side to chassis.	A8, A9, A10	Disconnect stabilizer capacitor C8. Adjust for curve of maximum amplitude and symmetry as in Figure 5. Attenuate generator output to avoid distortion of response curve.
7.	"	"	"	"	"	Vert. amp. thru 10KΩ to point (D). Low side to chassis.	A11	Reconnect capacitor C8. Adjust so that 4.5MC occurs at center of crossover lines as in Figure 6. SLIGHTLY retouch A10 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to point (B). Low side to chassis.	4.5MC	Any non-interfering channel.	DC probe thru detector (Figure 7) to pin 6 (plate) of 12AT7 (V7) common to chassis.	A12	Adjust for MINIMUM deflection.

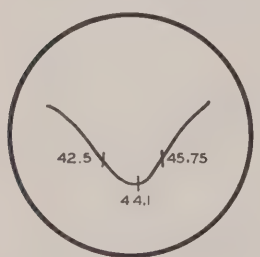


FIG.1

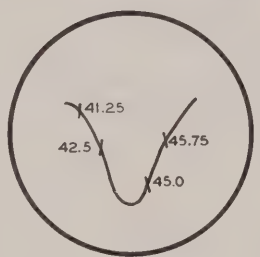


FIG.2

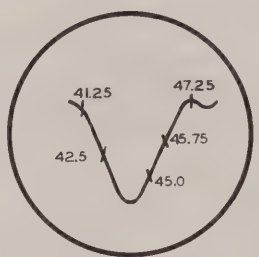


FIG.3

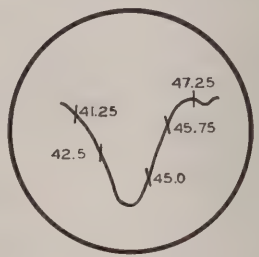


FIG.4

ALIGNMENT INSTRUCTIONS (CONT.)

RF ALIGNMENT

Connect the bias battery as under Video IF Alignment and adjust the contrast control for - 3 volts at AGC lead to tuner.
Disconnect the antenna transmission line at the input of the tuner.
Disconnect the B+ lead to the oscillator section of V3.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω carbon resistors.	Across tuner input terminals with 120Ω in each lead.	213MC (15MC SWP)	211.25MC 215.75MC	13	Vert. amp. thru 10KΩ to point (A). Low side to chassis.	A13, A14 A15, A16	Adjust for maximum gain and proper bandwidth as in Figure 8. A14 affects the bandwidth.
10.	"	"	207MC (15MC SWP)	205.25MC 209.75MC	12	"	A17	Check tracking and adjust circuit dress of A17 if necessary.
			201MC (15MC SWP)	199.25MC 203.75MC	11			
			195MC (15MC SWP)	193.25MC 197.75MC	10			
			189MC (15MC SWP)	187.25MC 191.75MC	9			
			183MC (15MC SWP)	181.25MC 185.75MC	8			
			177MC (15MC SWP)	175.25MC 179.75MC	7			
11.	"	"	85MC (15MC SWP)	83.25MC 87.75MC	6	"	A18, A19 A20, A21	Adjust for maximum gain and response curve similar to Figure 9.
12.	"	"	79MC (15MC SWP)	77.25MC 81.75MC	5	"	A22, A23 A24	If necessary, compress or expand A22, A23 and A24 for proper tracking.
13.	"	"	69MC (15MC SWP)	67.25MC 71.75MC	4	"	A25, A26 A27	If necessary, compress or expand A25, A26 and A27 for proper tracking.
14.	"	"	63MC (15MC SWP)	61.25MC 65.75MC	3	"	A28, A29 A30	Adjust for maximum gain and curve similar to Figure 9.
15.	"	"	57MC (15MC SWP)	55.25MC 59.75MC	2	"	A31, A32 A33	If necessary, compress or expand A31, A32 and A33 for proper tracking.

OSCILLATOR ALIGNMENT

The bias setting should remain at -3 volts as under RF Alignment.
Set the fine tuning control at ½ turn from the extreme counter clockwise position for the entire oscillator alignment.
Reconnect the B+ lead to the oscillator section of V3.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
16.	Two 120Ω carbon resistors.	Across tuner input terminals with 120Ω in each lead.	213MC (15MC SWP)	211.25MC	13	Vert. amp. thru 10KΩ to point (B). Low side to chassis.	A34	Adjust to place marker at 50% on high frequency side of response curve.
			207MC (15MC SWP)	205.25MC	12		A35	
			201MC (15MC SWP)	199.25MC	11		A36	
			195MC (15MC SWP)	193.25MC	10		A37	
			189MC (15MC SWP)	187.25MC	9		A38	
			183MC (15MC SWP)	181.25MC	8		A39	
			177MC (15MC SWP)	175.25MC	7		A40	
			85MC (15MC SWP)	83.25MC	6		A41	
			79MC (15MC SWP)	77.25MC	5		A42	
			69MC (15MC SWP)	67.25MC	4		A43	
			63MC (15MC SWP)	61.25MC	3		A44	
			57MC (15MC SWP)	55.25MC	2		A45	

IF TRAP ALIGNMENT

The IF trap, L6, is for the purpose of eliminating interference in the IF range.
Tune to the channel on which interference is noted and adjust A46 for MINIMUM interference pattern on the screen.
As it is possible to tune L6 so that channel 2 is attenuated care should be used to avoid that possibility while adjusting A46.

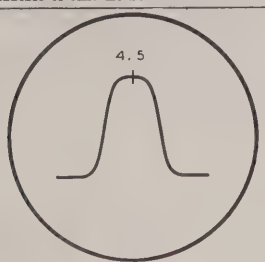


FIG. 5

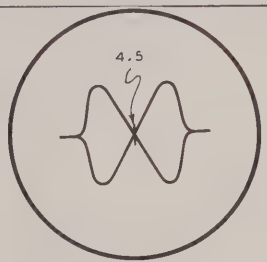


FIG. 6

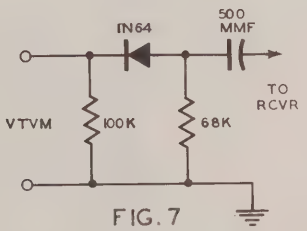


FIG. 7

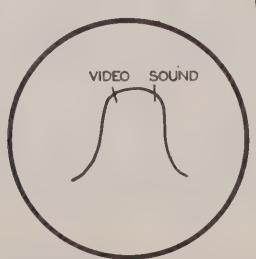


FIG. 8

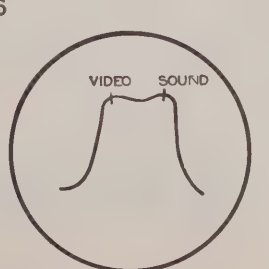
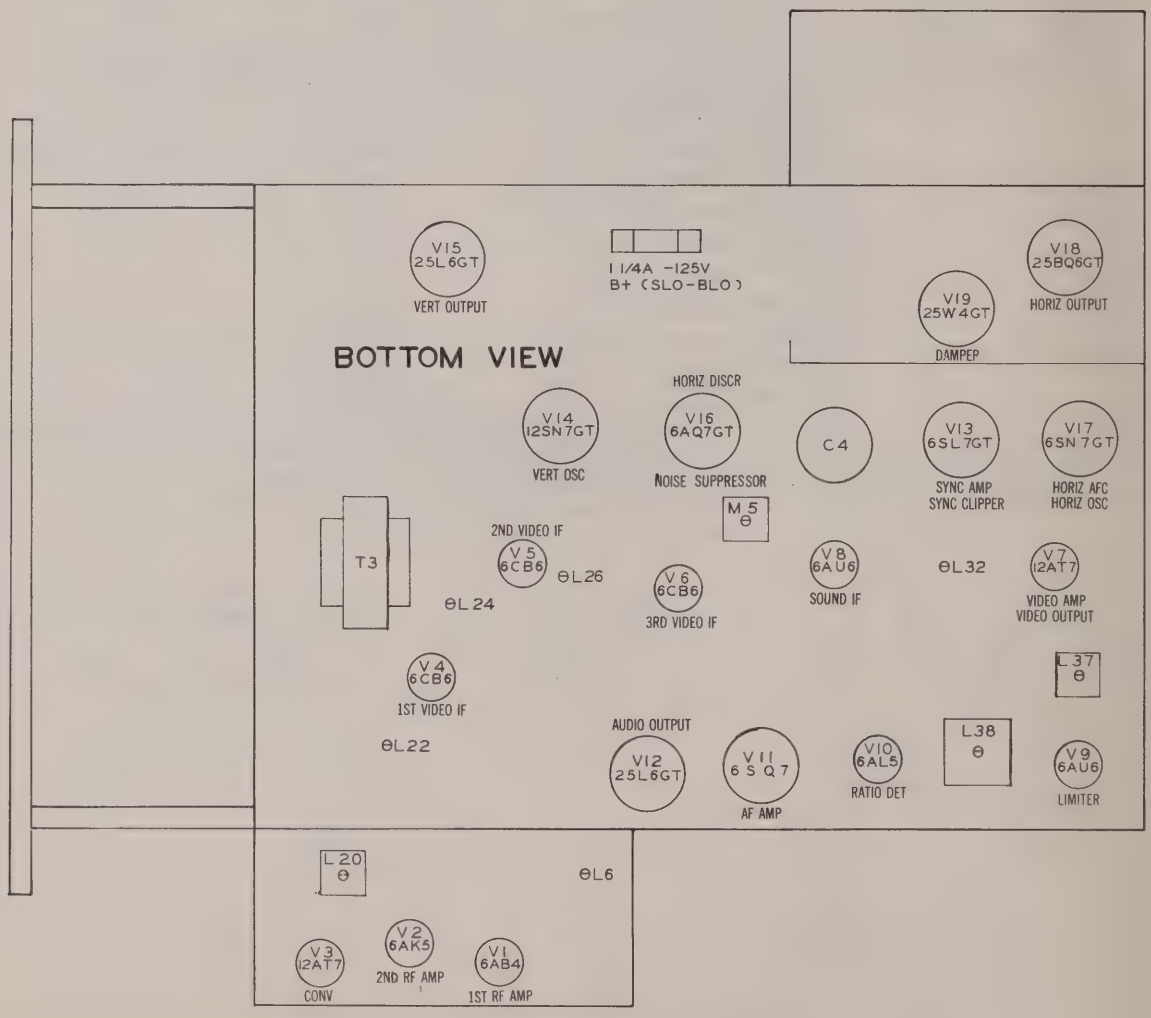


FIG. 9

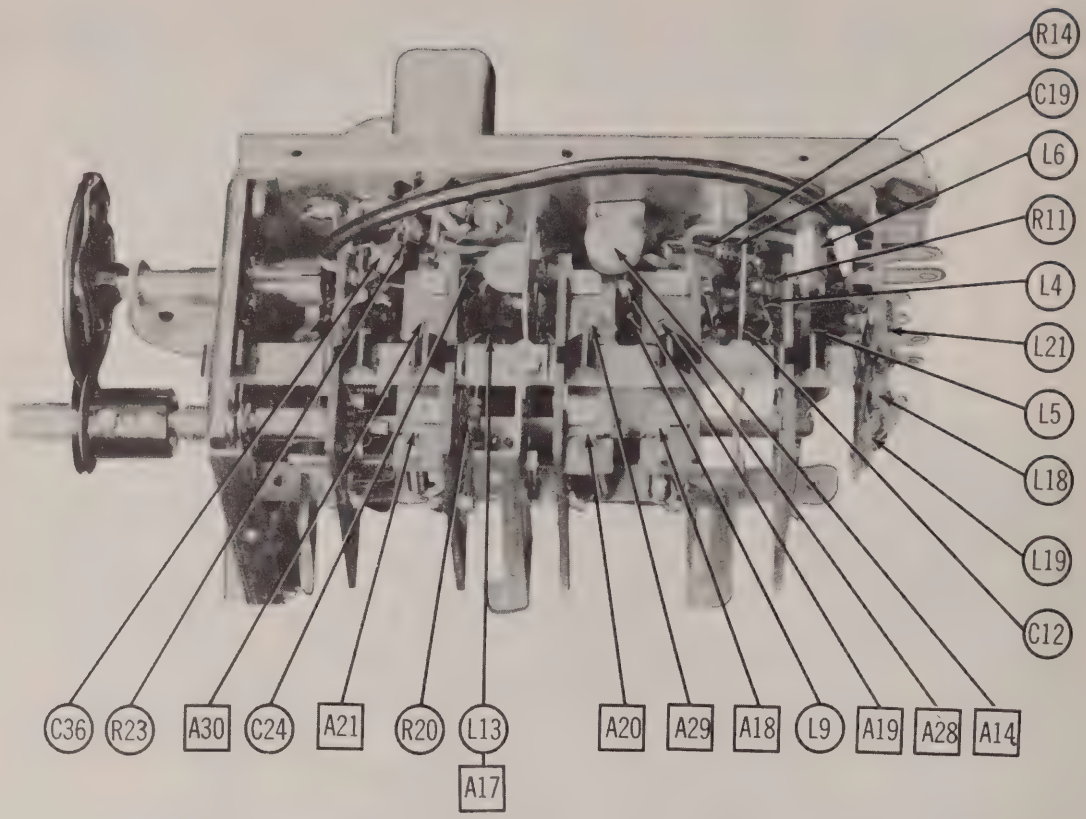
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AB4	† 18KΩ	0Ω	.1Ω	0Ω	† 13Ω	0Ω	150Ω		
V 2	6AK5	1.3Meg	0Ω	0Ω	.1Ω	† 6.6KΩ	† 17.6KΩ	0Ω		
V 3	12AT7	† 5.5KΩ	8.2KΩ	.2Ω	0Ω	0Ω	† 6.6KΩ	230KΩ	0Ω	.1Ω
V 4	6CB6	1.3Meg	100Ω	17Ω	15.9Ω	† 4.3KΩ	† 4.3KΩ	0Ω		
V 5	6CB6	1.4Meg	100Ω	14.5Ω	12.5Ω	† 4.3KΩ	† 4.3KΩ	0Ω		
V 6	6CB6	22KΩ	82Ω	10.8Ω	9.7Ω	† 6.6KΩ	† 6.6KΩ	0Ω		
V 7	12AT7	19.5KΩ	2.2Meg	0Ω	.6Ω	.6Ω	#8KΩ	19.5KΩ	18KΩ	4.5Ω
V 8	6AU6	5.5Ω	220Ω	6.3Ω	8.2Ω	†11.1KΩ	†41.2KΩ	220Ω		
V 9	6AU6	56KΩ	0Ω	13Ω	10.5Ω	† 1KΩ	† 120KΩ	0Ω		
V 10	6AL5	INF	INF	8.5Ω	10.5Ω	22KΩ	INF	22KΩ		
V 11	6SQ7	0Ω	4.7Meg	0Ω	0Ω	0Ω	† 250KΩ	7.5Ω	4.5Ω	
V 12	25L6GT	INF	23Ω	† 1.7KΩ	† 49KΩ	500KΩ	0Ω	23Ω	150Ω	
V 13	6SL7GT	3.5Meg	† 48KΩ	0Ω	10KΩ	#26KΩ	220Ω	20Ω	19Ω	
V 14	12SN7GT	100KΩ	† 47KΩ	0Ω	140KΩ	† 1Meg	0Ω	23Ω	22Ω	
V 15	25L6GT	INF	22Ω	† 670Ω	† 890Ω	† 1Meg	0Ω	17Ω	2.7KΩ	
V 16	6AQ7GT	2.1Meg	1.1Meg	120KΩ	37KΩ	#26KΩ	18KΩ	4.5Ω	1.6Ω	
V 17	12SN7GT	68KΩ	#63KΩ	65Ω	3.3Meg	† 69KΩ	0Ω	21Ω	20Ω	
V 18	25BQ6GT	1Meg	23Ω	INF	† 3.8KΩ	1Meg	INF	21Ω	0Ω	TOP CAP #58Ω
V 19	25W4GT	INF	INF	160KΩ	† 150KΩ	† 60Ω	INF	13Ω	19Ω	
V 20	1X2A	PINS 1 TO 9 HAVE INF RESISTANCE								TOP CAP #458Ω
V 21	21EP4B	.6Ω	230KΩ	PIN 10 #100KΩ	PIN 11 260KΩ	PIN 12 0Ω				

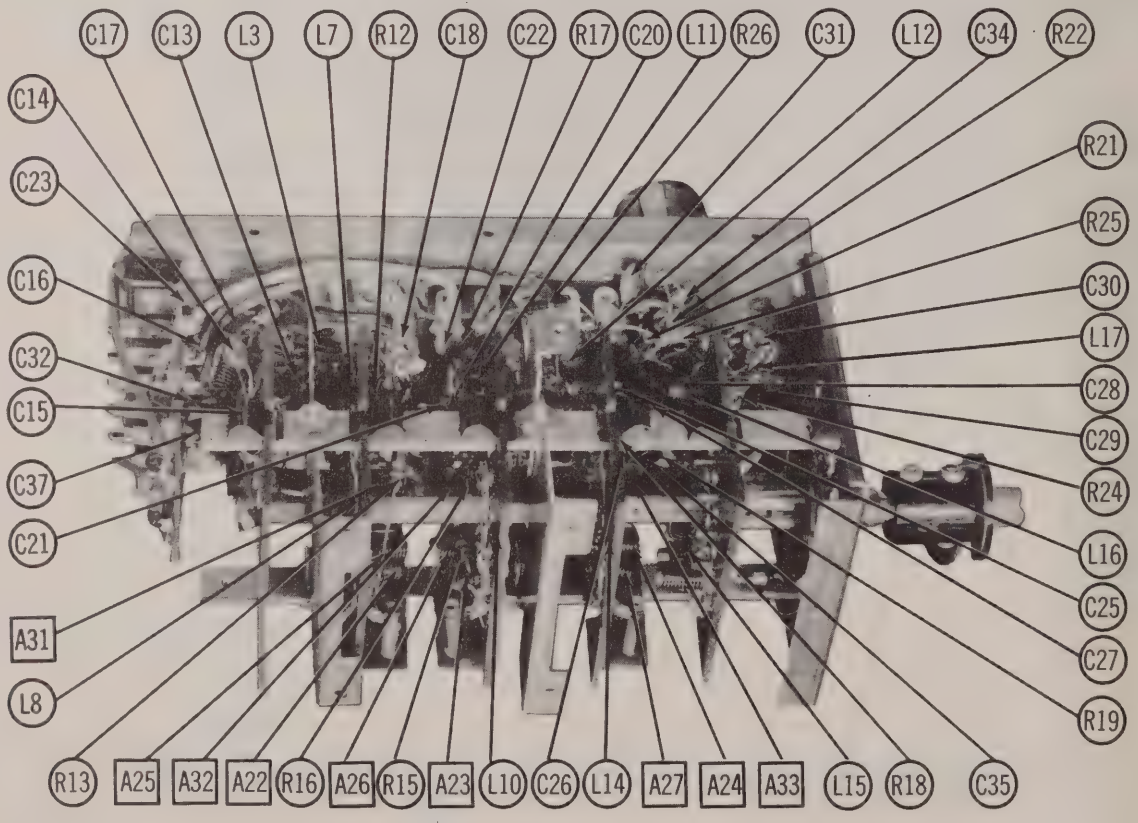
† MEASURED FROM OUTPUT OF M2.
# MEASURED FROM PIN 3 OF V19.



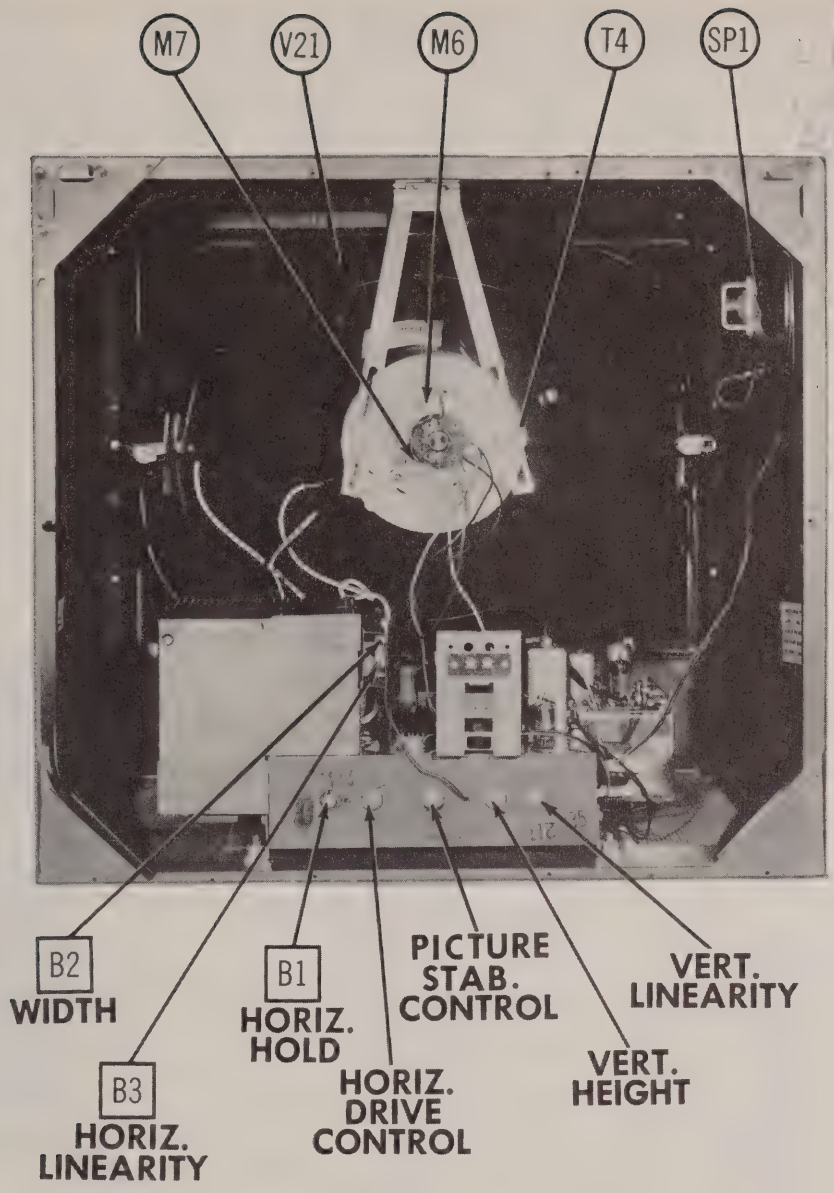
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control at mid-position and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

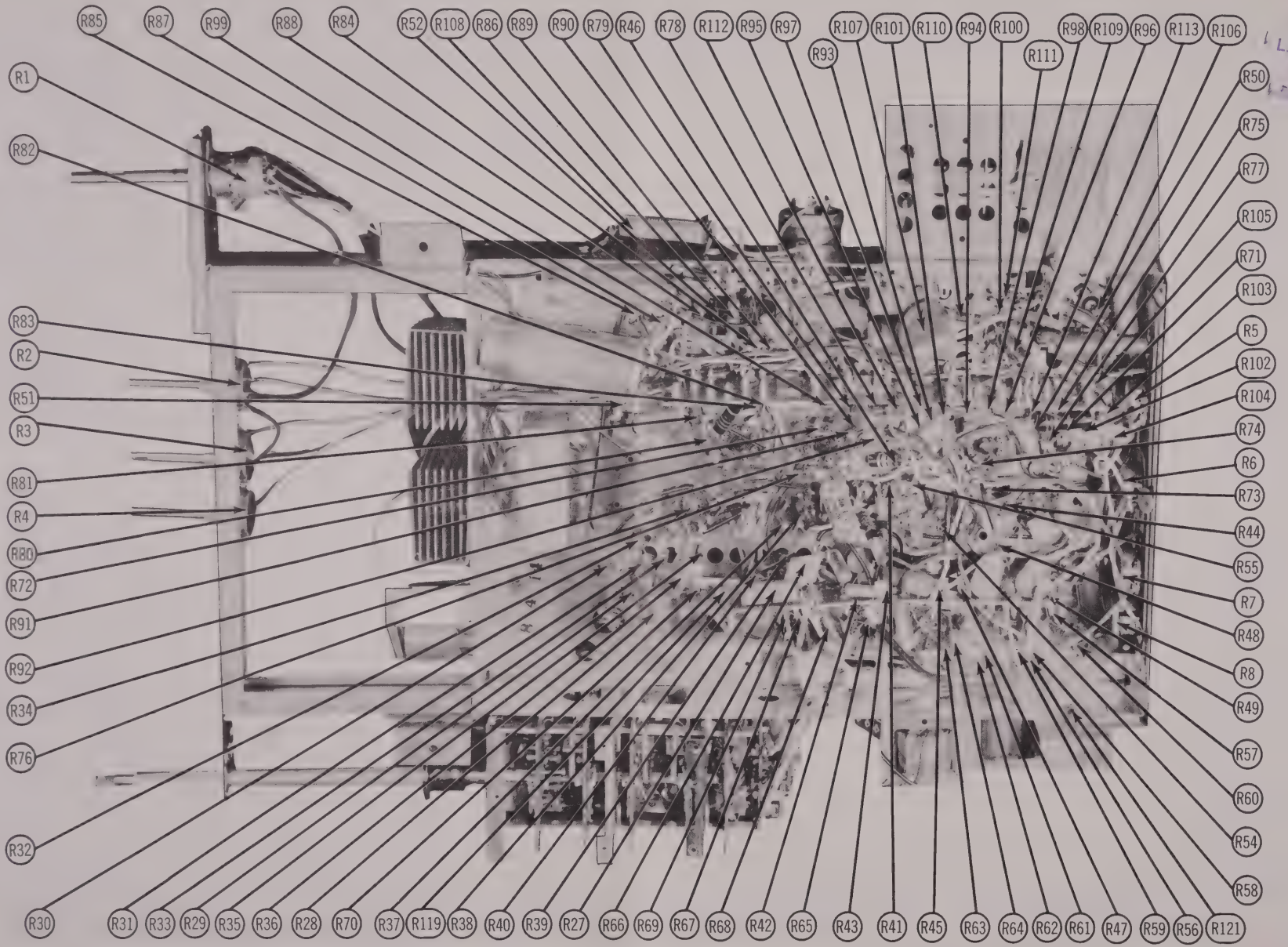
The horizontal drive control should be rotated in a counter clockwise direction as far as possible without compression of the center of the picture, or presence of a vertical white line.

The width slug (B2) should be adjusted for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.

PICTURE STABILIZER CONTROL

The Picture Stabilizer Control is used to increase sync stability in locations where electrical noise is a problem. Adjust in a clockwise direction for minimum noise interference and picture distortion. If advanced too far picture distortion may occur.



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PROPERT
L. F. BLANK
3024 MEADE ST.
DENVER, COLORADO

PROPERTY
L. F. BLANKEN
3924 MEADE
DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		General Electric PART No.	STANDARD REPLACEMENT		
V1	1st RF Amplifier	6AB4	6AB4	5CE	
V2	2nd RF Amplifier	6AK5	6AK5	7BD	
V3	Converter	12AT7	12AT7	9A	
V4	1st Video IF Amp.	6CB6	6CB6	7CM	
V5	2nd Video IF Amp.	6CB6	6CB6	7CM	
V6	3rd Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Amplifier				
	Video Output	12AT7	12AT7	9A	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Limiter	6AU6	6AU6	7BK	
V10	Ratio Detector	6AL5	6AL5	6BT	
V11	AF Amplifier	6SQ7	6SQ7	8Q	
V12	Audio Output	25L6GT	25L6GT	7S	
V13	Sync Amplifier				
	Sync Clipper	6SL7GT	6SL7GT	8BD	
V14	Vert. Oscillator	12SN7GT	12SN7GT	8BD	
V15	Vert. Output	25L6GT	25L6GT	7S	
V16	Horiz. Discr.				
	Noise Suppressor	6AQ7GT	6AQ7GT		
V17	Horiz. AFC				
	Horiz. Oscillator	12SN7GT	12SN7GT	8BD	
V18	Horiz. Output	25BQ6GT	25BQ6GT	6AM	
V19	Damper	25W4GT	25W4GT	4CG	
V20	HV Rectifier	1X2A	1X2A	9Y	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA			RTMA BASE TYPE	NOTES
	General Electric PART No.	SYLVANIA PART No.			
V21 A	21EP4B			12D	① Circuit changes necessary.
		21EP4 ①		12D	
		21EP4A		12D	
B	17BP4A	17BP4A		12D	
		17BP4 ①		12D	
		17HP4 ①		12C	
		17RP4 ①		12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	General Electric PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1	300	150	RCE-110	AFHS1-72		XA005		FP119	TVL-1434	
C2	125	350	RCE-140	AFHS1-73		XA012		FP140	TVL-1638	
C3	150	300	RCE-143	AFHS1-73		XA012		FP217.9	TVL-1584	
C4A	■40	300	RCE-118	AFH3-154		C136		FP396.2	TVL-2826	
B	▲10	450								
C	▲10	150								
C5	30	450	RCE-141	PRS450/30		BR3045A		TC77	TVA-1711	
C6A	▲100	75	RCE-142	AFH2-93		C130		FP255	TVL-1714	
B	■20	300							TVA-1420	
C7	1	50	RCE-090	PRS150/4		BBR-1-50T		TC31	TVA-1300	
C8	1	50	RCE-090	PRS150/4		BBR-1-50T		TC31	TVA-1300	
C9	150	500	UCU-532	1468-00015	D6-151	5W5T15	GP2K-151	MC236	1FM-315	
C10	150	500	UCU-532	1468-00015	D6-151	5W5T15	GP2K-151	MC236	1FM-315	
C11	1				TCZ-1		NP0K-010		5TCCB-V1	
C12	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C13	680		RCE-3045	SI680	D6-681		GP2K-681	UC-5368	5GA-T68	
C14	5		RCW-3057	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C15	5	500	UCG-1005	1469-000005		5R5V5		MCB205	MS-55	
C16	10		RCW-3066	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C17	10		RCW-3066	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C18	1-5		RCY-065		829-6					
C19A	800			BPD-0008		TM5T8	812-001	DCD-521	5HK-2D1	
B	800			BPD-0008		TM5T8				
C20	1-5		RCY-065		829-6					
C21	15		RCW-3076		TCZ-15		NP0K-150		5TCC-Q15	
C22	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C23	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C24	680		RCW-3045	SI680	D6-681		GP2K-681	UC-5368	5GA-T68	
C25	.6-2.4		RCY-048		829-3					
C26	680		RCW-3027	SI680	D6-681		GP2K-681	UC-5368	5GA-T68	
C27	3.9		RCN-055				NP0K-3R9			
C28	1.5		RCW-3046				N750K-1R5			
C29	12		RCW-3074		TCZ-12		NP0K-120			
C30	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C31	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C32	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C33	.05	600	RCC-102	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C34	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C35	5	500	UCG-1005	1469-000005		5R5V5		MCB205	MS-55	
C36	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C37	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C38	5000		RCW-3014	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C39	51	500	UCG-2021	1469-00005		5R5Q5		MCB225	MS-45	
C40	5000		RCW-3014	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C41	.5	200	RCC-016	P288-5		PJ2P5		PT405	2TM-P5	
C42	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C43	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C44	5000		RCW-3014	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C45	5	500	UCG-1005	1468-000005	TCZ-4.7	5W5V5	GP1K-050	MC205	1FM-55	
C46	5000		RCW-3014	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C47	22	500	UCG-1012	1469-000025		5R5Q25		MCB220	MS-425	
C48	10	500	UCG-2004	1468-00001	D6-100	5W5Q1	GP1K-100	MC215	1FM-41	
C49	800		RCW-3037	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No	RATING CAP	RATING VOLT	REPLACEMENT DATA General Electric PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C20	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C51	1000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C52	800		RCW-3037	BPD-0008	DD-801	TMST8	801-001	DC-521	5HK-D1	
C53	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C54	100	200	RCC-105	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C55	.8	500	UCG-2010						MS-42	
C56	100	500	UCU-1528	1469-0001		SR5T1		MCB235	MS-31	
C57	.05	200	UCC-045	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C58	6	500	UCU-002							
C59	1	600	RCN-031	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C60	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C61A	4000		RCW-3004	BPD-2X004	D6-402	TMSDD5	812-004	DCD-524	5HK-2D4	
B	4000				D6-402		812-004			
C62	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C63	100	500	UCU-028	1468-0001	D6-101	5WST1	GP1K-101	MC235	1FM-31	
C64	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C65	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C66	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C67	1000	600	UCC-035	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C68	500	600	UCC-035	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C69	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C70	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C71	500	600	UCC-037	P688-003	D6-502	PTE6D3	GP2-333-302	PT623	6TM-D3	
C72A	5000									
B	25		◆PC-81				◆1404-02		◆102C2	
C			◆REK-002							
C73	100	2000	RCC-059	P1068-005		PTE16D5		PT16D5	MB-D5	
C74	1	400	UCC-048	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C75	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C76	30	200	UCC-045	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C77	60	600	RCN-018	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C78	470	500	UCU-1044	1468-0005	D6-471	5WST5	GP2K-471	MC345	1FM-35	
C79A	25		†REK-003	P688-001	†PC-178	PTE6D1	GP2L-102	PT621	6TM-D1	
B	3000			P688-0022		PTE6D22	GP2-333-222	PT6222	6TM-D22	
C80	3000	600	RCN-060							
C81	3000	600	RCN-060	P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C82	06	500	RCC-113	P688-06		PTE6S6		PT616	6TM-S6	
C83	470	500	UCU-1044	1468-0005	D6-471	5WST5	GP2K-471	MC345	1FM-35	
C84	02	500	RCC-113	P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C85	02	500	RCN-044	P1068-022				PT1612	MB-S22	
C86	005	500		P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C87	.2	200	UCC-050	484-2				TP429	2TM-P22	
C88	2	200	UCC-050	484-2				TP429	2TM-P22	
C89	150	500	RCU-299							
C90	100	500	UCU-028	1468-0001	D6-101	5WST1	GP1K-101	MC235	1FM-31	
C91	50	500	RCC-048	P600-05	DF-503	PTE5S5		PT615	6TM-S5	
C92	500	500	RCU-294	1479-0007	D6-681		GP2K-681	UC-5368	1FM-37	
C93	25	500	RCN-025	P688-02	D6-102	PTE6S1	GP2-333-103	PT611	6TM-S1	
C94	50	200	UCC-042	P488-03		PTE4S3		PT413	4TM-S3	
C95	0035	500	RCN-034	1464-004		LDR5D4		MCB463	MS-24	
C96	05	200	RCC-105	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C97	470	500	UCU-1044	1468-0005	D6-471	5WST5	GP2K-471	MC345	1FM-35	
C98	220	500	UCU-036	1468-00025		5RST5		MCB240	MS-325	
C99	0068	500	RCN-023							
C100	1200	350						MCB255	MS-21	
C101	0068	500	RCN-033							
C102	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	
C103	6	1500	RCU-3000							
C104	22	500	UCU-0002	1469-000025				MCB220	MS-425	
C105	1	400	UCC-048	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C106	47	500	UCU-0020					MCL447	15GAB-Q47	
C107	220	500	UCU-036	1468-00025	D6-221	5WST25	GP2K-221	MC240	1FM-325	
C108	1	400	UCC-048	P488-1		PTE6P1		PT601	6TM-P1	
C109	100	500	RCC-114							
C110	5	200	RCC-048	P288-5		PJ2P5		PT405	2TM-P5	
C111	05	500	UCC-045	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C112	500	2000	RCN-035	HV20C	TV3-502	MM-C20T5	413-501		20DK-T5	
C113	12	1000	RCU-305							
C114	5000		RCW-3014	BPD-005	DD-502	TMSD5	811-005	DC-525	5HK-D5	Note 1
C115	12	1000	RCU-305							Note 1

◆ Items C72A, C72B, C72C, R66A, R66B are combined in one unit.
When requesting replacement C72B and C72C should be 250MMF

† Items C79A, C79B, R79A, R79B are combined in one unit.
Some Models use separate units, C79A part #RCN-062, C79B part #RCN-060
Note 1. Not used in all Models.

CONTROLS

ITEM No	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA General Electric PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2 Meg	1	RRC-1186	QJ-328*	RTV-375	SBB-715-S		Contrast-Panel
B	500KΩ	1						Volume-Rear
C	Switch							Attach to R1B
R2A	500KΩ	1	RRC-1175	QH-133	AG-58-S	AB-59	U-50	Brightness-Note 1
B	Shaft		Not Req.	Not Req.	RS-2	AK-4	Not Req.	Attach to R2A
R3A	2.5MΩ	1	RRC-1174	QH-228	AG-49-S		U-415	Vert. Hold- Note 2
B	Shaft		Not Req.	Not Req.	RS-2		Not Req.	Attach to R3A
R4A	100KΩ	1	RRC-1173	QH-128	AG-49-S	AB-40	U-41	Horiz. Hold-Note 3
B	Shaft		Not Req.	Not Req.	RS-2	AK-4	Not Req.	Attach to R4A
R5A	500Ω	1	RRC-1195	QH-114	AG-19-S	AB-10	SU-14	Horiz. Drive
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	3 Meg	1	RRC-1196	QH-140	AG-85-S	AB-84	U-56	Picture Stabilizer-Note 4
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	At tach to R6A
R7A	3 Meg	1	RRC-1196	QH-140	AG-85-S	AB-84	SU-59	Height
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R7A
R8A	4000Ω	2	RRC-1127	W-4000	A43-4000	VK-134	R5000L	Vert. Linearity-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4		Not Req.	Attach to R8A

* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B11-139 & P1-204 (Panel)
B13-133 & R2-230 (Rear) & SWITCH 76-1.

Note 1. Model No. 17T10 uses alternate control (Part No. RRC-200).
Note 2. Model No. 17T10 uses alternate control (Part No. RRC-193).
Note 3. Model No. 17T10 uses alternate control (Part No. RRC-191).
Note 4. Model No. 17T10 uses alternate control (Part No. RRC-201).

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA General Electric PART No.	IRC PART No.	NOTES
R9	3.3Meg	½	URD-133	BTS-3.3Meg	
R10	3.3Meg	½	URD-133	BTS-3.3Meg	
R11	120Ω	½	URD-027	BTS-120	
R12	18KΩ	½	URD-079		
R13	18KΩ	½	URD-079		
R14	5600Ω	1	URE-067		
R15	680Ω	½	URD-045	BTS-680	
R16	1200Ω	½	URD-051	BTS-1200	
R17	10KΩ	½	URD-073		
R18	12KΩ	½	URD-075		
R19	1000Ω	½	URD-049	BTS-1000	
R20	5600Ω	½	URD-067	BTS-5600	
R21	10KΩ	½	URD-073		
R22	220KΩ	½	URD-105	BTS-220K	
R23	1000Ω	½	URD-049	BTS-1000	
R24	8200Ω	½	URD-071	BTS-8200	
R25	3300Ω	½	URD-061	BTS-3300	
R26	2200Ω	½	URD-057	BTS-2200	
R27	5600Ω	5	RRW-079		
R28	100KΩ	½	URD-097	BTS-100K	
R29	22KΩ	½	URD-081		
R30	100Ω	½	URD-025	BTS-100	
R31	1000Ω	½	URD-049	BTS-1000	
R32	27KΩ	½	URD-083		
R33	220KΩ	½	URD-105		
R34	100Ω	½	URD-025	BTS-100	
R35	1000Ω	½	URD-049	BTS-1000	
R36	3300Ω	10	RRW-098	1 3/4A-3500	
R37	22KΩ	½	URD-081		
R38	82Ω	½	URD-023	BTS-82	
R39	1000Ω	½	URD-049	BTS-1000	
R40	5600Ω	2	URF-087	BTB-5600	
R41	33000Ω-5%	½	URD-1061	BTS-3300-5%	
R42	33KΩ	½	URD-085	BTS-33K	
R43	33KΩ	½	URD-085	BTS-33K	
R44	2.2Meg	½	URD-129	BTS-2.2Meg	
R45	1500Ω	½	URD-053	BTS-1500	
R46	18KΩ	2	URF-079	BTB-18K	
R47	4700Ω	2	URF-065	BTB-4700	
R48	220KΩ	½	URD-105	BTS-220K	
R49	150KΩ	½	URD-101	BTS-150K	
R50	100KΩ-5%	½	URD-1097	BTS-100K-5%	
R51	33KΩ	½	URD-085	BTS-33K	
R52	56KΩ	½	URD-091	BTS-56K	
R53	1 Meg	½	URD-121	BTS-1 Meg	
R54	220Ω	½	URD-033	BTS-220	
R55	39KΩ	½	URD-087		
R56	91001-5%	½			Note 1
R57	56KΩ	½	URD-091	BTS-56K	
R58	470KΩ	½	URD-113	BTS-470K	
R59	1000Ω	½	URD-049	BTS-1000 -5%	
R60	100KΩ-5%	½	URD-1097	BTS-100K-5%	
R61	270Ω	½	URD-035	BTS-270	
R62	22KΩ-5%	½	URD-1081	BTS-22K-5%	
R63	22KΩ-5%	½	URD-1081	BTS-22K-5%	
R64	22KΩ-5%	½	URD-1081	BTS-22K-5%	
R65	4.7Meg	½	URD-137	BTS-4.7Meg	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA General Electric PART No.	IRC PART No.	NOTES
R66A	250KΩ	½	◆ REK-002		
B	500KΩ	½			
R67	1000Ω	½	URD-049		
R68	150Ω	1	URE-029	BTA-150	
R69	47KΩ	½	URD-089	BTS-47K	
R70	470KΩ	½	URD-113	BTS-470K	
R71	1 Meg	½	URD-121	BTS-1 Meg	
R72	680KΩ	½	URD-117	BTS-680K	
R73	10KΩ	½	URD-073	BTS-10K	
R74	220Ω	½	URD-033	BTS-220	
R75	22KΩ	1	URE-081	BTA-22K	
R76	18KΩ	½	URD-079	BTS-18K	
R77	470KΩ	½	URD-113	BTS-470K	
R78	47KΩ	½	URD-089	BTS-47K	
R79A	82KΩ	½	† REK-003	BTS-82K	
B	39KΩ	½		BTS-39K	
R80	100KΩ-5%	½	URD-1097	BTS-100K-5%	
R81	47KΩ	½	URE-089	BTA-47K	
R82	68KΩ	½	URD-093	BTS-68K	
R83	2.2Meg	½	URD-129	BTS-2.2Meg	
R84	3.3Meg	½	URD-133	BTS-3.3Meg	
R85	1.5Meg	½	URD-125	BTS-1.5Meg	
R86	18000Ω	2	URF-055	BTB-1800	
R87	220Ω	½	URD-033		
R88	82KΩ	½	URD-095	BTS-82K	
R89	470Ω	1	URE-041	BTA-470	
R90	1 Meg	½	URD-121	BTS-1 Meg	
R91	1 Meg	½	URD-121	BTS-1 Meg	
R92	180KΩ	½	URD-103	BTS-180K	
R93	330KΩ	½		BTS-330K	Note 2
R94	1 Meg	½	URD-121	BTS-1 Meg	
R95	150KΩ	½	URD-101	BTS-150K	
R96	33KΩ	½	URD-085	BTS-33K	
R97	68KΩ	1	URE-093	BTA-68K	
R98	27KΩ	½	URD-083	BTS-27K	
R99	150KΩ	1	URE-101	BTA-150K	
R100	150KΩ	1	URE-101	BTA-150K	
R101	68KΩ	½	URD-093	BTS-68K	
R102	10KΩ	½	URD-073	BTS-10K	
R103	56KΩ	2	URF-091	BTB-56K	
R104	1 Meg	½	URD-121	BTS-1 Meg	
R105	15KΩ	½	URD-077	BTS-15K	
R106	330Ω	½	URD-037		
R107	*	*	RRW-088		
R108	400Ω	10	RRW-053	1 3/4-4000	
R109	150KΩ	1	URE-101	BTA-150K	
R110	150KΩ	1	URE-101	BTA-150K	
R111	150KΩ	1	URE-101	BTA-150K	
R112	1000Ω	1	URE-049	BTA-1000	
R113	3300Ω	2	URF-061	BTB-3300	
R114	1200Ω	½	URD-051	BTS-1200	
R115	1.2Ω	5	RRW-056		
R116	470KΩ	1	URE-113		
R117	470KΩ	½	URD-113	BTS-470K	
R118	4.8Ω	5	RRW-048		
R119	1500Ω	5	RRW-082	1 3/4A-1500	
R120	**	**	RRW-051		
R121	470KΩ	1	URE-113	BTA-470K	Note 3

Note 1. Some models use a 10KΩ resistor in this application.
Note 2. Some models use a 180KΩ resistor in this application.
Note 3. Some models use a 6.8Meg resistor in this application.
* Special globar resistor-measures 14KΩ at 140 Volts.
** Special resistor-measures 20ΩHot, 250Ω Cold.
◆ Items R66A, R66B, C72A, C72B, C72C are combined oin one unit.
† Items R79A, R79B, C79A, C79B are combined in one unit.

TRANSFORMER (FILAMENT)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA General Electric PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA PART No.
T1	117VAC @ .07A	6.3VAC @ .6A			RTO-002	P-8190 ①	P-2944①	FO-615	F-52X①	

① Drill one new mounting hole.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA General Electric PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA PART No.	NOTES
T2	443Ω tap ⑤ & 43Ω	24Ω tap ⑤ 13Ω, 19Ω SEC. 2 0Ω	RTO-116	A-8130①	HVO-7 ①	TFB-5	D-14	23IT1 ④	Horiz. Output Trans.
T3	170Ω tap ② 8Ω		RTO-117	A-8123②	A-3037	TSO-8 ②	A-102X	222T1②	Vert. Output Trans.
T4A	30Ω ③		RLD-045						Horiz. Deflection Coils
B	80Ω								Vert. Deflection Coils
T5	15Ω		RLD-016		MWC-1			212R1②	Horiz. Lin. Coil
T6	27Ω				MWC-1				Width Coil

① Wire as shown on replacement installation schematic #3.
② Drill one new mounting hole.
③ 80Ω per coil
④ Wire as shown on 23IT1 engineering sheet.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA General Electric PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T7	2.3KΩ	3.5Ω	184Ω	.46Ω	RTO-081	A-3332	A-3025	RO-2 ①	S-1X ①	

① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA General Electric PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	5"	PM	3.9Ω		ST-105 Mod. P5-X	5A07	

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ~Cy.)	REPLACEMENT DATA General Electric PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.320A	28Ω	.9HY	PLF-051	C-2328 ①		TR-1733 ①	C-23X ①

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA General Electric PART No.	MERIT PART No.	IRC PART No.	NOTES
L2	Ant. Trans.	.20CT	.1Ω	RLA-037			
L3	RF Choke	0Ω		RLI-165			
L4	Ant. Coil	0Ω		RSX-023			Includes switch wafer with coils (L4, L5) C13, C14, C15, C16, C17.
L5	Ant. Coil	0Ω					
L6	IF Trap	.1Ω		RLI-159			
L7	1st RF Plate Coil	0Ω					Channel 13.
L8	1st RF Plate Coils	0Ω		RSX-022			Includes switch wafer with coils.
L9	RF Coil	0Ω					
L10	2nd RF Grid Coils	0Ω		RSX-021			Includes switch wafer with coils.
L11	2nd RF Grid Coil	0Ω					Channel 13.
L12	Fil. Choke	.31Ω				CLA	.56 Microhenry.
L13	2nd RF Plate Coil	0Ω					Channel 13.
L14	2nd RF Plate Coils	0Ω		RSX-020			Includes switch wafer with coils.
L15	Osc. Coils	0Ω		RSX-019			Includes switch wafer with coils.
L16	Osc. Coil	0Ω					Channel 13.
L17	Cathode Choke	.2Ω		RLI-145			1.4 Microhenries.
L18	RF Choke	13Ω		RLI-152			
L19	RF Choke	3Ω		RLI-154		CLA	3.3 Microhenries.
L20	Conv. Plate	.1Ω	.1Ω	RTL-139			Includes 1KΩ resistor.
L21	RF Choke	3Ω		RLI-154		CLA	3.3 Microhenries.
L22	1st Video IF	0Ω	.1Ω	RTL-137			Includes trap.
L23	Fil. Choke	1.8Ω		RLI-122		CLA	2.2 Microhenries.
L24	2nd Video IF	.1Ω		RLI-096			
L25	Fil. Choke	1.8Ω		RLI-122		CLA	2.2 Microhenries.
L26	3rd Video IF	.1Ω		RLI-173			
L27	Fil. Choke	1.8Ω		RLI-122		CLA	2.2 Microhenries.
L28	Shunt Peaking Coil	5.5Ω		RLI-162	TV-184		165 Microhenries.
L29	Series Peaking Coil	8.2Ω		RLI-138	TV-180	CL-1	10 Microhenries.
L30	Series Peaking Coil	3.8Ω		RLI-174	TV-181*		90 Microhenries; wound on 3.3KΩ resistor.
L31	Fil. Choke	1.8Ω		RLI-122		CLA	2.2 Microhenries.
L32	4.5MC Trap	.4Ω		RLI-100	TV-151		
L33	Shunt Peaking Coil	4.6Ω		RLI-108	TV-181		110 Microhenries
L34	Series Peaking Coil	6.7Ω		RLI-161	TV-184†		165 Microhenries; wound on 6.8KΩ resistor.
L35	Shunt Peaking Coil	5.5Ω		RLI-162	TV-184		165 Microhenries.
L36	Series Peaking Coil	5Ω			TV-183		130 Microhenries; wound on 22KΩ resistor.
L37	Sound IF	3Ω	3.2Ω	RLI-097	TV-108		
L38	Ratio Det.	3.5Ω	.80CT	RTD-008	TV-110		Tertiary winding - 0Ω.
L39	Fil. Choke	1.8Ω		RLI-122		CLA	2.2 Microhenries.
L40	RF Choke	1.8Ω		RLI-122		CLA	2.2 Microhenries.
L41	RF Choke	8.2Ω		RLI-138		CL-1	10 Microhenries.
L42	Horiz. Osc.	115Ω		RLC-091			Tapped ⑤ 65Ω.
L43	RF Choke	8.2Ω		RLI-138		CL-1	10 Microhenries.

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA General Electric PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.320A	RER-008	NJ5	682	1023	68350	350
M2	.320A	RER-008	NJ5	682	1023	68350	350

PTY Of
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PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			General Electric PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M3	3AG Slo-Blo P/T	1-1/4A 125V	REF-005		3151.25 (3AG-1 1/4A Slo-Blo-P/T)		MDV-1-1/4	

MISCELLANEOUS

ITEM No.	PART NAME	General Electric PART No.	NOTES
M4	RF Tuner	RJX-050	Complete.
M5	Video Detector Assy.	RLX-035	Includes: 3 Coils, 2 Capacitors and Crystal Diode.
M6	Focus Assembly	RLF-054	Includes Centering Device; (Less Flexible Shaft).
M7	Ion Trap	RET-013	
M8	Correction Magnet	REA-002	
	Cabinet	RAV-205	Model 17T10.
	Cabinet	RAV-204	Model 21T2.
	Back	RAB-197	Model 17T10.
	Back	RAB-196	Model 21T2.
	Escutcheon	RDE-125	Model 21T2.
	Door, Escutcheon	RAD-084	Model 21T2.
	Mask	RDM-084	Model 17T10.
	Mask	RDM-032	Model 21T2.
	Safety Glass	RDW-062	Model 17T10.
	Safety Glass	RDW-061	Model 21T2.
	Knob	RDK-263	Off/ On/ Volume,
	Knob	RDK-275	Tine Tuning.
	Knob	RDK-276	Contrast.
	Knob	RDK-299	Channel Selector.
	Knob	RDK-244	Horizontal Hold, Vertical Hold, Brightness Model 21T2
	Knob	RDK-291	Picture Stabilizer

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the Channel Selector and Fine Tuning knobs.

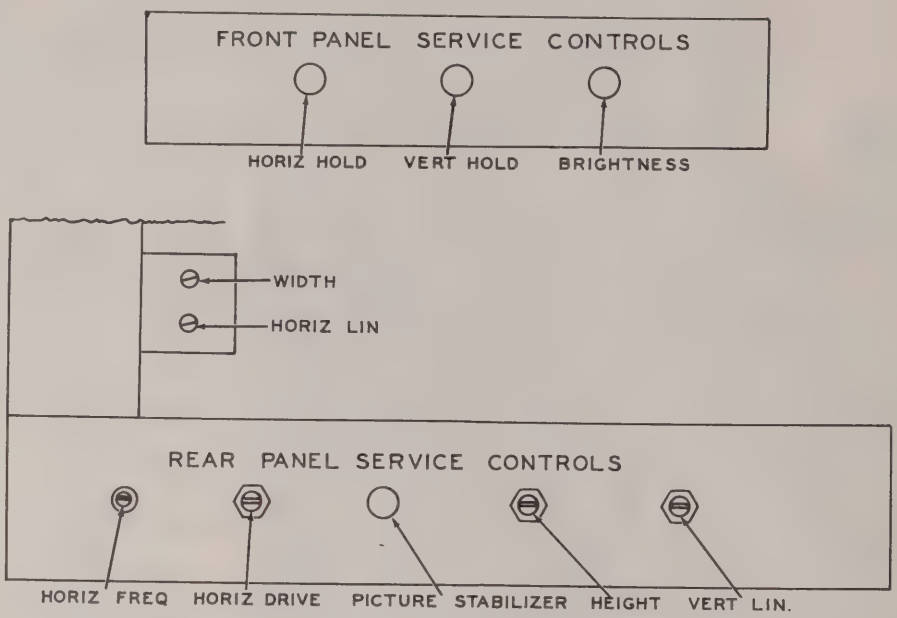
PICTURE TUBE SAFETY GLASS CLEANING

For picture tube safety glass cleaning, it is necessary to remove chassis. (See disassembly instructions.)

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions.).

SERVICE ADJUSTMENT LOCATION



SPECIAL ADJUSTMENTS — PICTURE STABILIZER CONTROL

Adjust for minimum noise interference and picture distortion. For location see chart above.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of Horiz. Freq. Slug can be made from rear of chassis. For location see rear panel service controls above.

SOUND DETECTOR BUZZ ADJ.

To eliminate Sound IF Detector buzz, adjust the Ratio Detector Secondary (L38) located on top of chassis. (See tube placement chart).

FUSES

One fuse is used for power supply protection. For location see Tube Placement Chart.

CENTERING

Centering is accomplished by adjustment of wobble plate on a PM Focusing Assy. Loosen lock screws and move wobble plate adj. arm up, down or sideways until picture is properly centered.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. * Disconnect built-in antenna. Remove 10 metal screws. Remove rear cover.
3. Disconnect speaker, 2 yoke plugs, HV lead (at HV cage and CRT socket.)
4. Remove 4 chassis bolts. Remove chassis.
5. Remove 4 speaker nuts. Remove speaker.

* NOTE : Built-in Antenna is fastened to rear cover.

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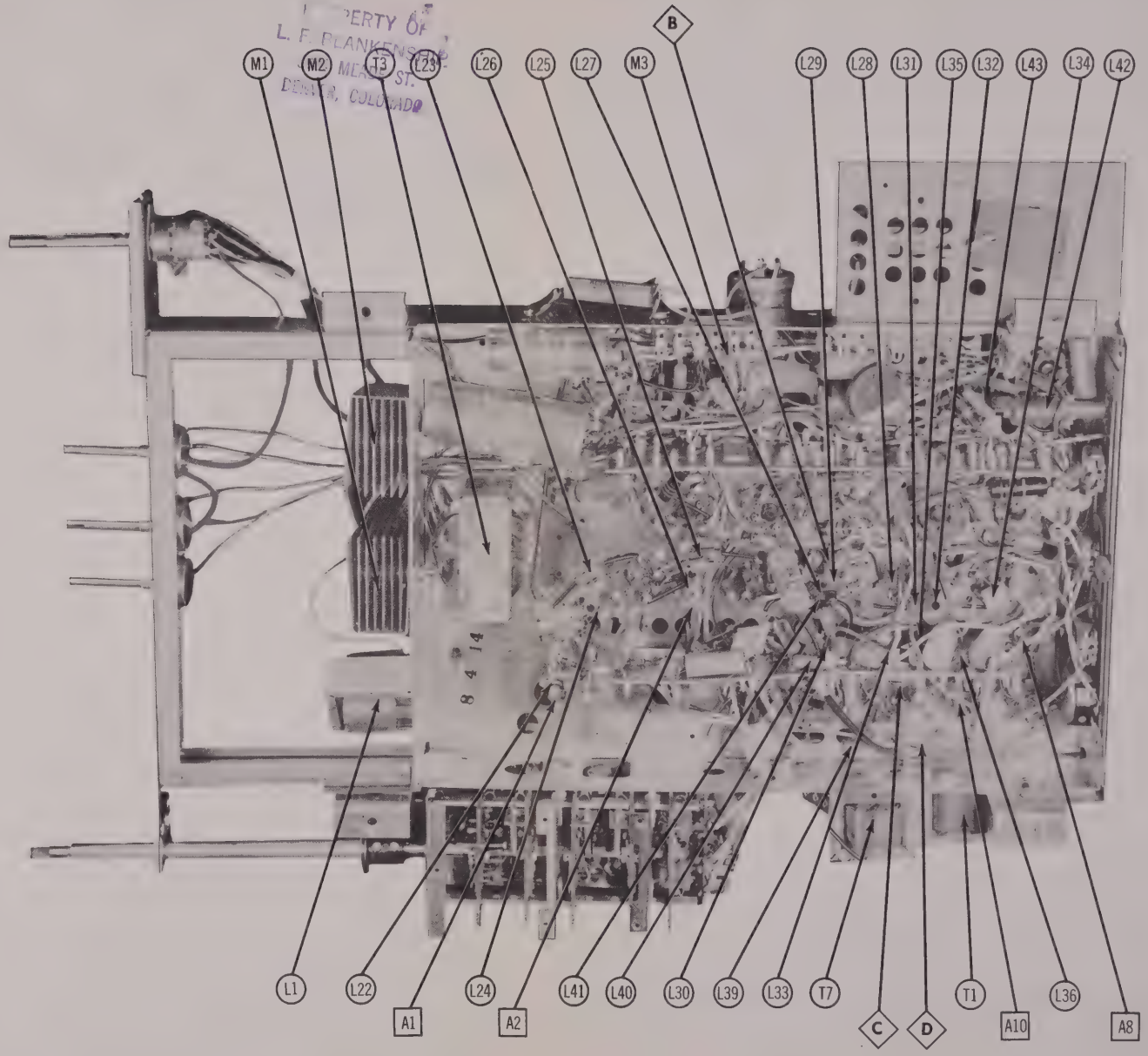
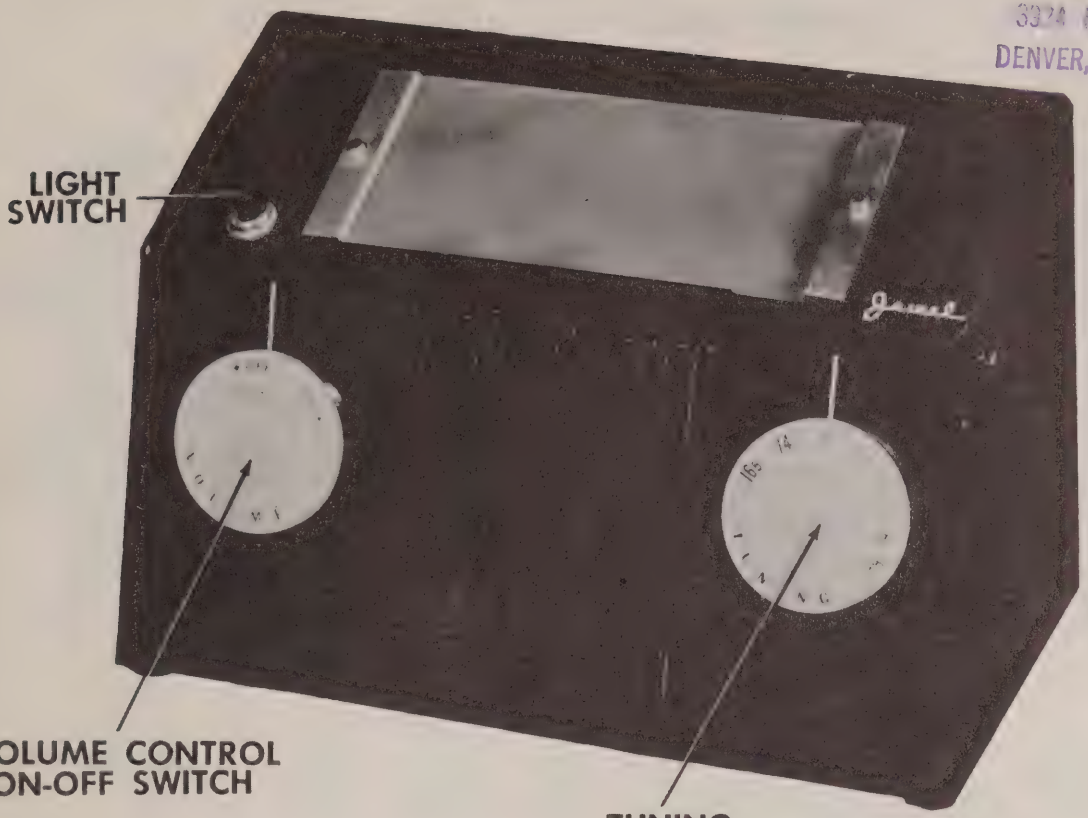
DENVER, COLORADO



CHASSIS BOTTOM VIEW- INDUCTOR AND ALIGNMENT IDENTIFICATION

L. F. [illegible]
3324 MEADE ST.
DENVER, COLORADO



JEWEL
MODEL 5205

TRADE NAME	Jewel Model 5205
MANUFACTURER	Jewel Radio Corp., 900 Passiac Avenue, East Newark, New Jersey
TYPE SET	AC/DC Operated AM Superheterodyne Receiver
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AV6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	540-1650 KC

RATING .25 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator of antenna section of tuning gang. Low side to B-.	455 KC (400Ω Mod)	Tuning gang fully open.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1650 KC	"	"	A5	"
3.		Loop.	1400 KC	Tune to 1400 KC signal.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

After alignment is completed replace chassis in cabinet, turn tuning gang fully closed and set the "55" on the dial opposite the index mark on the cabinet.

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PARTS LIST AND DESCRIPTIONS

JEWEL
MODEL 5205

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		JEWEL PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AV6	12AV6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	JEWEL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	40	150		PRS150/40-40		EDL4415C		3N532	TVA-3430	Red
B	40	150		PRS25/25						Green
C	20	20								Blue
C2	.05	200		P288-05	DF-503	PJ255		PT415	2TM-S5	
C3A	220									
B	.002									
C	.005				♦PC-150		♦1408-01		♦103C4	
D	250									
E										
C4	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C5	.05	400		P488-05		PTE4S5		PT415	4TM-S5	
C6	.1	400		P488-1		PTE4P1		PT401	4TM-P1	

♦ Items C3A, C3B, C3C, C3D, C3E, R5A, R5B, R5C are conbined in one unit.
When replacing items separately C3D and C3E should total 250MMF.

CONTROLS

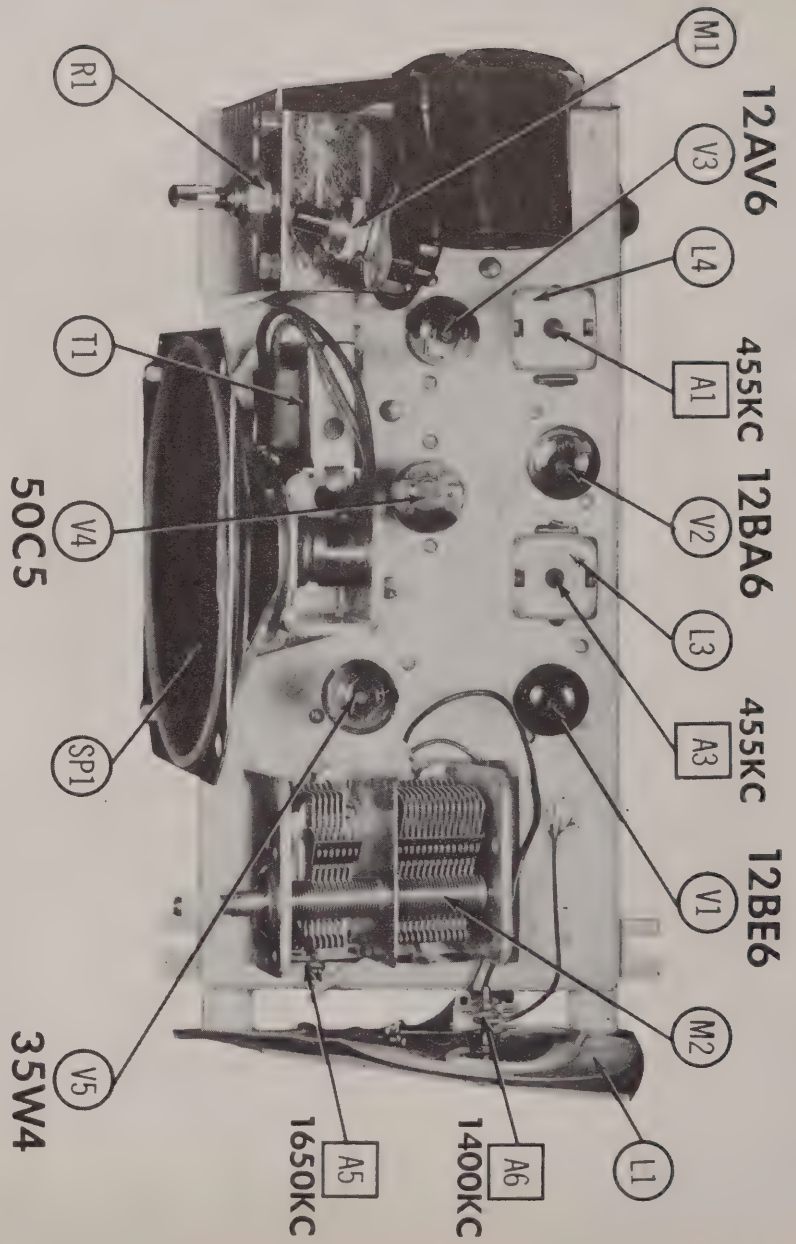
ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	JEWEL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	2Meg	½	50-37	Q13-139	AG-66-Z	AB-76	U-55	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A.
C	Switch		Not Req.	76-1	SWB	KB-1	US-26	Attach to R1A.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	JEWEL PART No.	IRC PART No.	
R2	22KΩ	1/3		BTS-22K	
R3	180Ω	1/3		BTS-180	
R4	3.3Meg	1/2		BTS-3.3Meg	
R5A	6.8Meg	1/2		BTS-6.8Meg	
B	470KΩ	1/2		BTS-470K	
C	470KΩ	1/2		BTS-470K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PART No.	IRC PART No.	
R6	150Ω	½		BTS-150	
R7	1500Ω	1		BTA-1500	
R8	22Ω	½			

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		JEWEL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.8kΩ	3.3Ω	180Ω	.16Ω	38K33	A-3332 ①	A-3025 ①	R0-2 ①	S-1X ①	① Bend mounting tabs down, file out slots mount on original mounting bracket.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	JEWEL PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.3Ω	80-37	ST-113 Mod. P4-X	4A07	

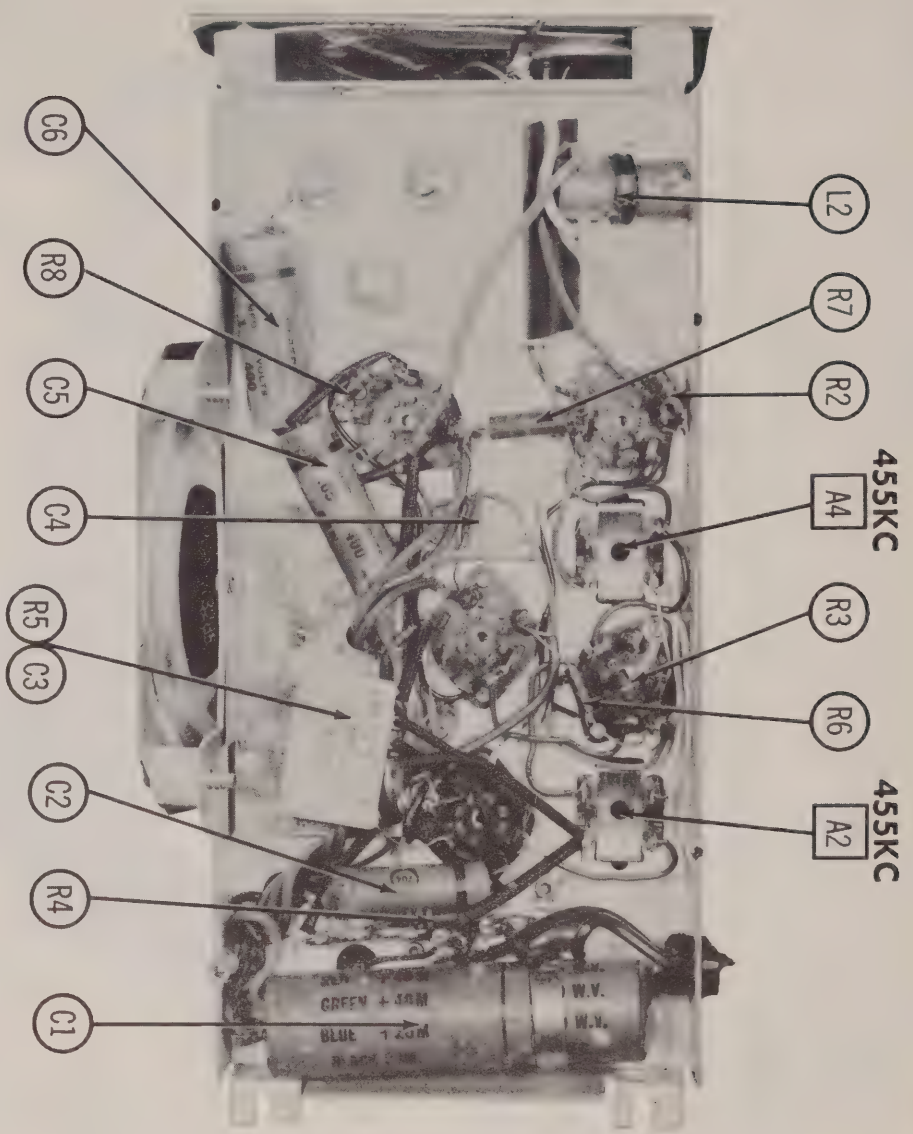
COILS (RF-IF)

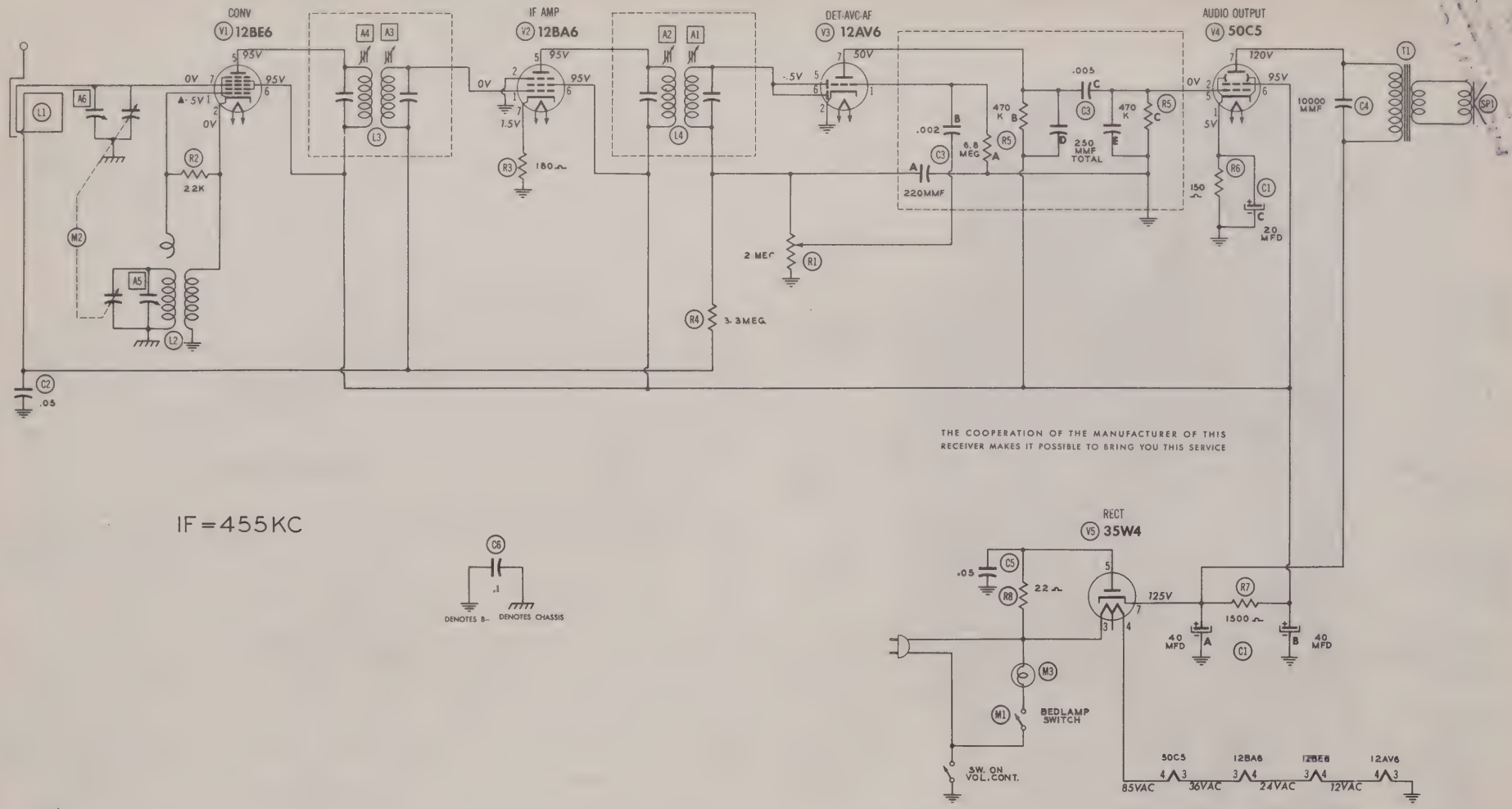
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	JEWEL PART No.	MERIT PART No.	
L1	Loop Antenna	0Ω	2.6Ω			
L2	Osc. Coil	1Ω	7Ω			
L3	Input IF	18Ω	17Ω	BC-352		
L4	Output IF	18Ω	17Ω	BC-353		

MISCELLANEOUS

ITEM No.	PART NAME	JEWEL PART No.	NOTES
M1	Switch		Bed Lamp
M2	Tuning Capacitor		18-440 Microhenries; 20-128 Microhenries
M3	Lamp Bulb		Sylvania 25T10 or Equivalent

CHASSIS—BOTTOM VIEW





THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

IF = 455KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	1Ω	0Ω	13Ω	†1500Ω	†1500Ω	5Meg
V 2	12BA6	1Meg	0Ω	24Ω	12Ω	†1500Ω	†1500Ω	180Ω
V 3	12AB6	6.8Meg	0Ω	35Ω	24Ω	2Meg	2Meg	†470KΩ
V 4	50C5	150Ω	470KΩ	35Ω	85Ω	470KΩ	†1500Ω	†180Ω
V 5	35W4	INF	INF	118Ω	85Ω	140Ω	95Ω	100KΩ

† MEASURED FROM PIN 7 OF V5.
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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196-4

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MASCO
MODEL MB-8N

PROPERTY OF
[illegible]
DENVER, COLORADO

MASCO
MODEL MB-8N

MASCO
MODEL MB-8N

TRADE NAME	Masco Model MB-8N
MANUFACTURER	Mark Simpson Mfg. Co, Inc., 32-28 49th. St., Long Islang City 3, N.Y.
TYPE SET	AC Operated Audio Amplifier
TUBES (Three)	Types 6SJ7 AF Amp., 6L6G Audio Output, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .58 Amp. @ 117 Volts AC

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PARTS LIST AND DESCRIPTIONS

MASCO
MODEL MB-8N

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		MASCO PART No.	STANDARD REPLACEMENT		
V1	AF Amplifier	6SJ7	6SJ7	8N	
V2	Audio .Output	6L6G	6L6G	7S	
V3	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MASCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	8	450		PRS450/8-8		BBRD8D45		2N518	TVA-2720	
B	8	450								
C2A	8	450		PRS450/8-8		BBRD8D45		2N518	TVA-2720	
B	8	450								
C3	8	450		PRS450/8		BR845A		TC71	TVA-1704	
C4	50	50		PRS50/50		BR505		TC39	TVA-1308	
C5	50	50		PRS50/50		BR505		TC39	TVA-1308	
C6	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C7	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C8	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESIST-ANCE	WATTS	MASCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	34-011-182	Q13-133	AG-60-Z	B-60-S	U-48	Tone
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A
R2A	500KΩ	½	33-010-188	Q13-133	AG-60-Z	B-60	U-48	Phono Volume
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R2A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MASCO PART No.	IRC PART No.	
R3	18Ω	½			
R4	270KΩ	½		BTS-270K	
R5	1500Ω	½		BTS-1500	
R6	1Meg	½		BTS-1Meg	
R7	270KΩ	½		BTS-470K	

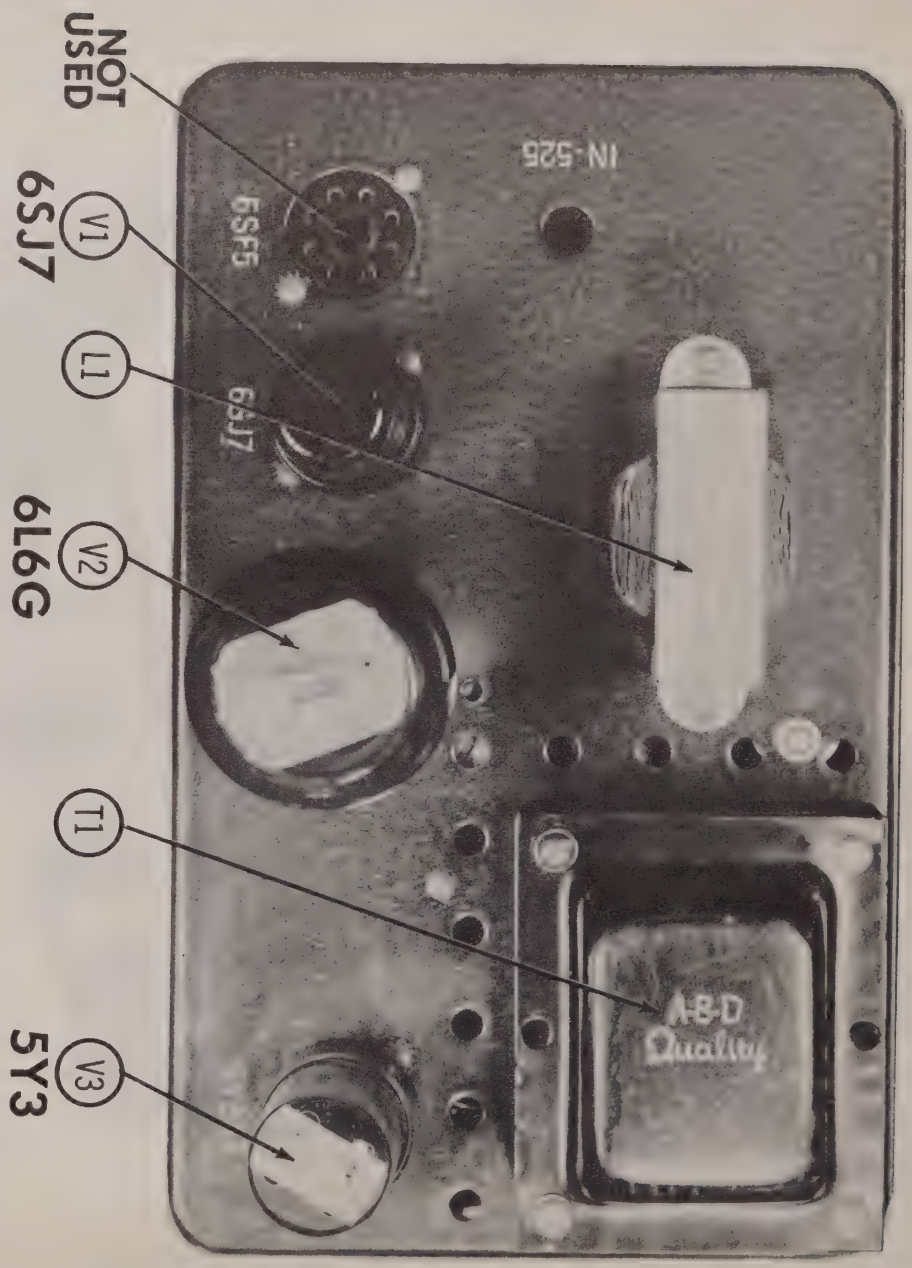
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MASCO PART No.	IRC PART No.	
R8	270KΩ	½		BTS-270K	
R9	1Meg	½		BTS-1Meg	
R10	4700Ω	1		BTA-4700	
R11	47Ω	1			
R12	47Ω	1			

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .58	640VCT .150ADC	5VAC @ 2A	6.3VAC @ 1.38A			P-2952	PH-90 ①	

① Drill new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	3.8KΩ	500Ω SEC. 2 8Ω tap @ 4Ω	150Ω	37.8Ω SEC. 2 .72Ω tap @ .55		C-1002	A-3028 ①			① Drill one new mounting hole.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.075A	405Ω	8.8 Hy.		C-1002 ①	C-2995	R-8120 ①	C-8X

① Drill one new mounting hole.

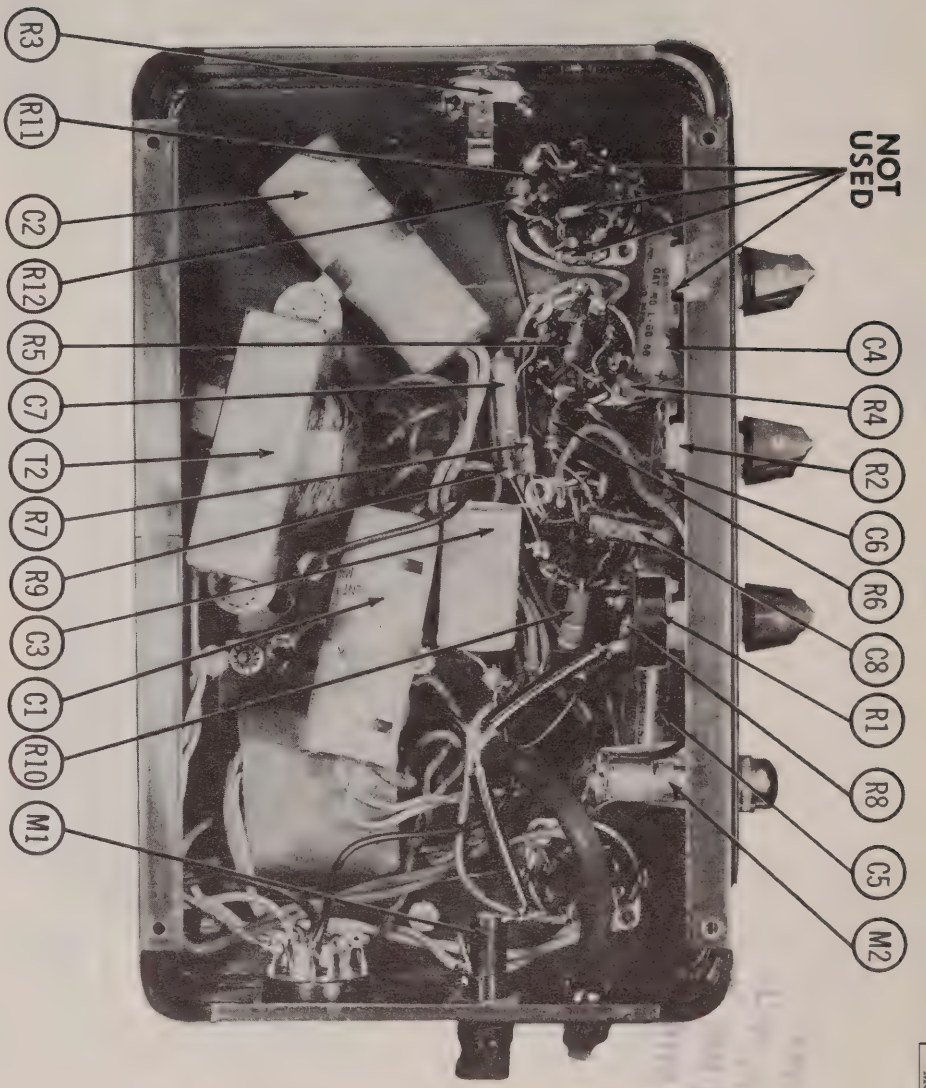
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MASCO PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1A 250V			312001 (3AG-250V)	342001	AGC-1	HKP

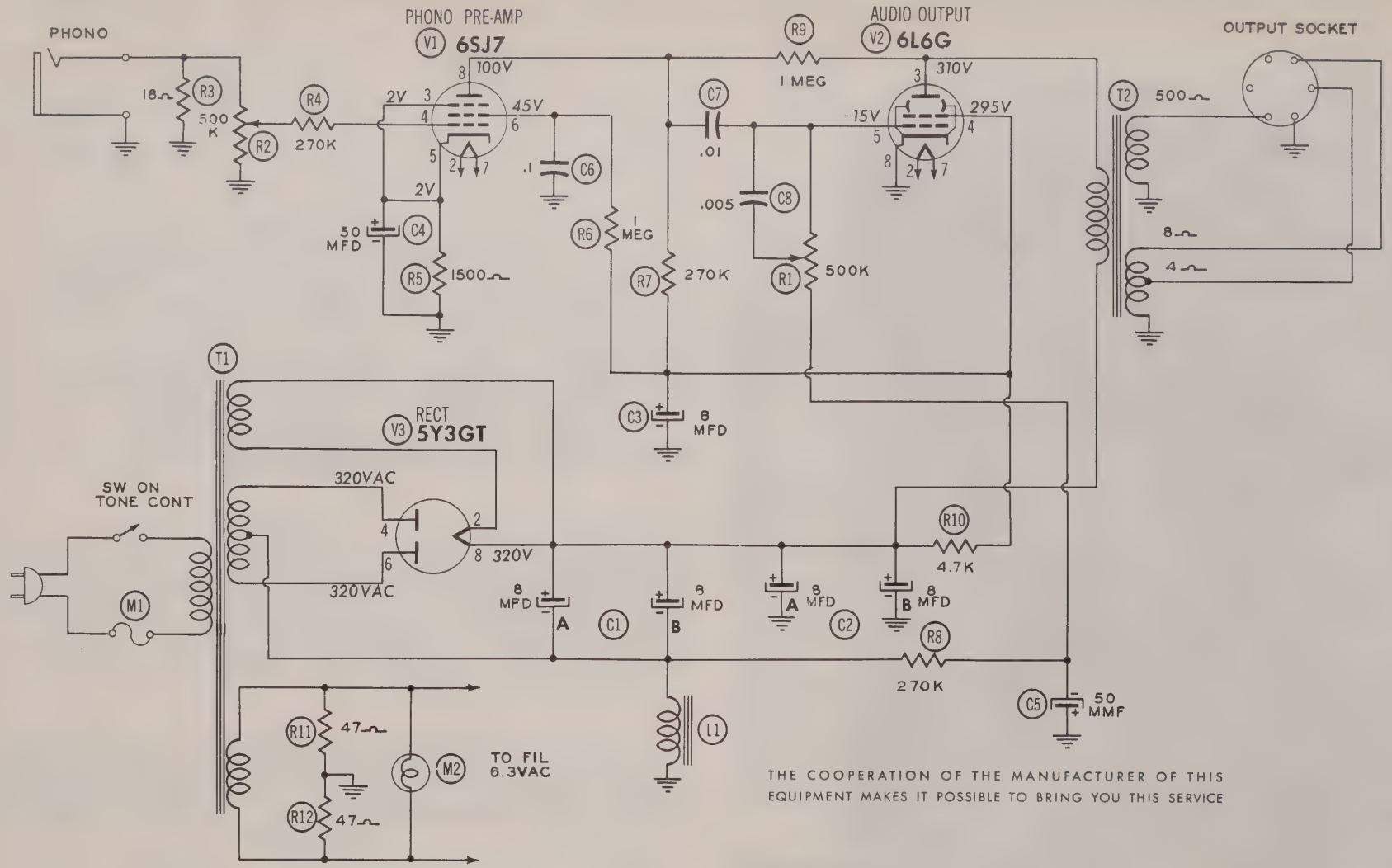
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MASCO PART No.		
M2	Bayonet	6-8	.25	Brown			Type #47

CHASSIS—BOTTOM VIEW



MASCO MODEL MB-8N



THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SJ7	0Ω	23Ω	1.5KΩ	270KΩ	1.5KΩ	†1 Meg	23Ω	†270KΩ
V 2	6L6G	0Ω	23Ω	†150Ω	†4.7KΩ	600KΩ	†4.7KΩ	23Ω	0Ω
V 3	5Y3GT	INF	300KΩ	INF	600Ω	INF	600Ω	INF	300KΩ

† MEASURED FROM PIN 2 OF V3

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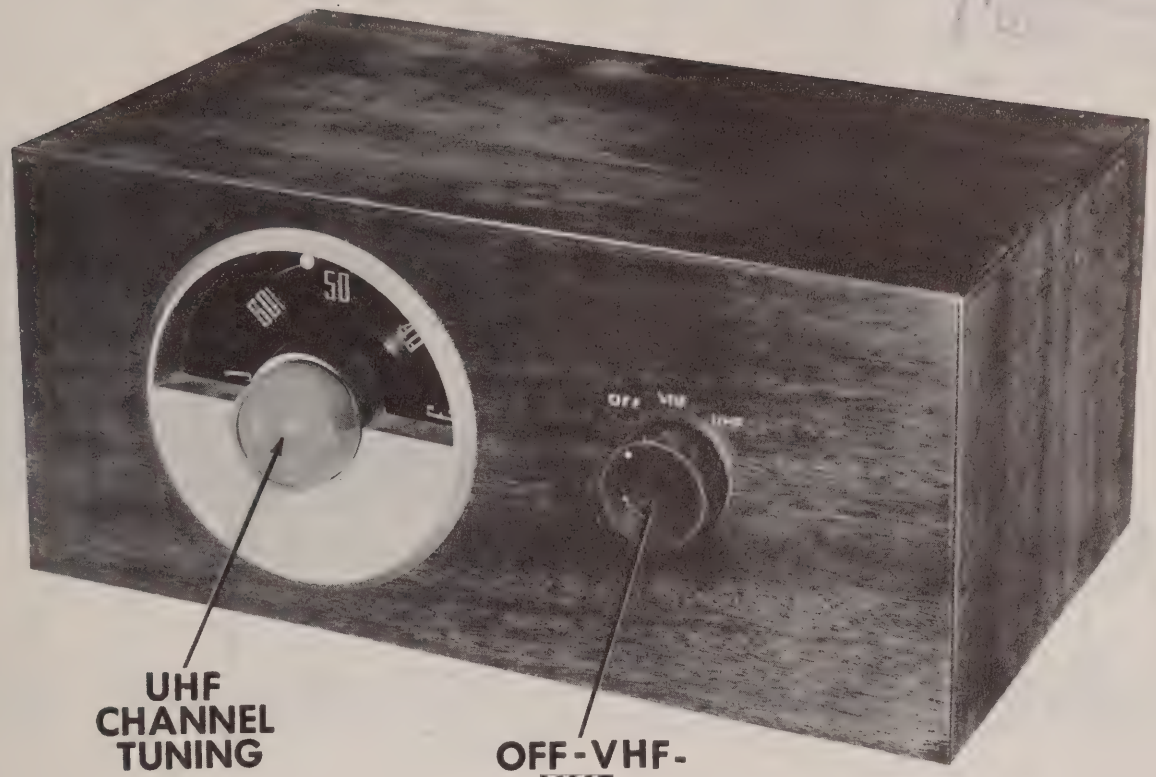
196-5

1. DC Voltage measurements are at 20,000 ohms per volt; DC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 Volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

MOTOROLA
MODEL TC-101, B



MOTOROLA
MODEL TC-101, B

TRADE NAME	Motorola Model TC-101, B
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago 51, Ill.
TYPE SET	AC Operated UHF Conv., with Self Contained Power Supply
TUBES (TWO)	Types 6AF4 UHF Osc., 6BK7 IF Amp.
POWER SUPPLY	110-120 Volts AC RATING .05 Amp @ 117 Volts AC
TUNING RANGE	Channels 44 thru 83

THIS UHF CONVERTER THAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT SHOULD NOT BE ATTEMPTED IN THE FIELD.

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PARTS LIST AND DESCRIPTIONS

MOTOROLA
MODEL TC-101, B

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		MOTOROLA PART No.	STANDARD REPLACEMENT		
V1	UHF Oscillator	6AF4	6AF4	9AJ	
V2	IF Pre-Amplifier	6BK7	6BK7	7DK	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	23B600855	PRS150/50-30		BRD5315A		2N520	TVA-2450	Red
B	30	150								Green
C2	470		21K400940	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C3	470		21K400940	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C4	3		21A720035							
C5	.5		21K83994							
C6	1000		21A712386							
C7	62		21R410028							
C8	800		21K115034	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C9	12		21R114073		TCN-12		N750K-120			
C10	39		21R115978							
C11	1000		21A712386	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C12	150		21R400932		TCN-150		N750L-151			
C13	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C14	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C15	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C16	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C17	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C18	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R1	18KΩ	1/2	6R5591	BTS-18K	
R2	2700Ω	1/2	6R5577	BTS-2700	
R3	2200Ω	2	6R5687	BTB-2200	
R4	68Ω	1/2	6R2039		
R5	27KΩ	1	6R6427	BTA-27K	
R6	47KΩ	1/2	6R6056	BTS-47K	

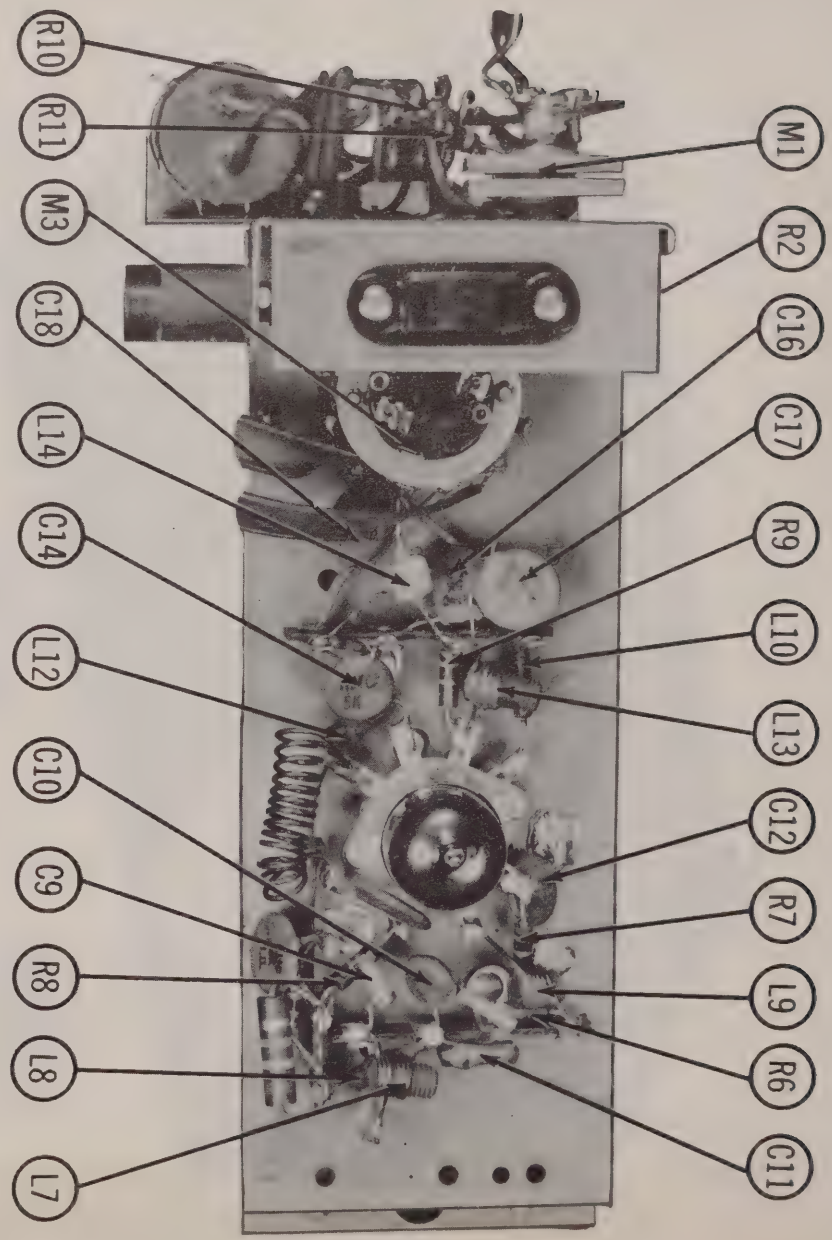
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R7	68Ω	1/2	6R2039		
R8	1000Ω	1/2	6R6229	BTS-1000	
R9	3900Ω	1/2	6R5659	BTS-3900	
R10	470Ω	2	6R2010	BTB-470	
R11	47Ω	1/2	6R5550		

TRANSFORMER (FILAMENT)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .05A	6.3VAC @ .85A			25B711592	PC-6134 ①	P-2944 ①	FO-615 ①	F-14X ①

① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MOTOROLA PART No.	REPLACEMENT DATA MERIT PART No.	NOTES
L1	Ant. Trans-mission Line Assembly			1A711524		
L2	Ant. Coil	0Ω		24A711504		Tapped
L3	Osc. Coil	0Ω		24B711595		Does not include core, core part #1A711455
L4	Fil. Choke	0Ω		24K712254		
L5	Fil. Choke	0Ω		24K712254		
L6	Cathode Choke	0Ω		24K712253		
L7	UHF IF Input Coil	0Ω		24K711472		Tapped
L8	RF Choke	1.8Ω		24K712103		
L9	UHF IF Grid Coil	0Ω		24K711473		
L10	Fil. Choke	.1Ω		24A711337		
L11	UHF IF Coupling	0Ω		24K711474		
L12	Cathode Choke	1.8Ω		24K712103		
L13	IF Pre-Amp. Output Coil	0Ω		24C711471		
L14	Conv. Output Trans.	.1Ω		24A790033		Tapped

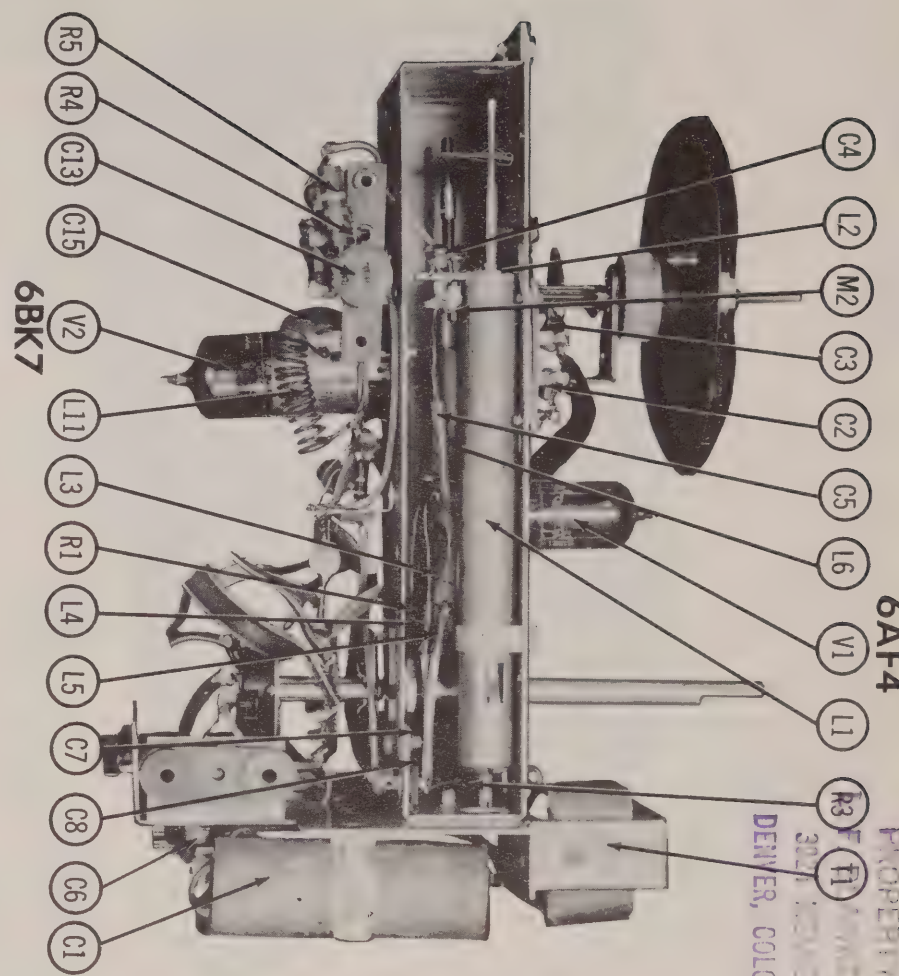
SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA MOTOROLA PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.036A	48B791092	NA5	5M4	1002A	6S65	65

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M2A	Germanium Crystal	48B711922	
B	Germanium Crystal	48B711923	
M3	Switch	40B711556	Off/On, Function Selector
	Cabinet	16E711535	Mahogany, Model TC101
	Cabinet	16K711536	Limed oak, Model TC101B
	Back Cover	1X711867	
	Dial Escutcheon	13C711313	
	Dial Scale	34C711312	
	Knob	36B711296	UHF Tuning
	Knob	36K711558	Function Selector

CHASSIS—BOTTOM VIEW



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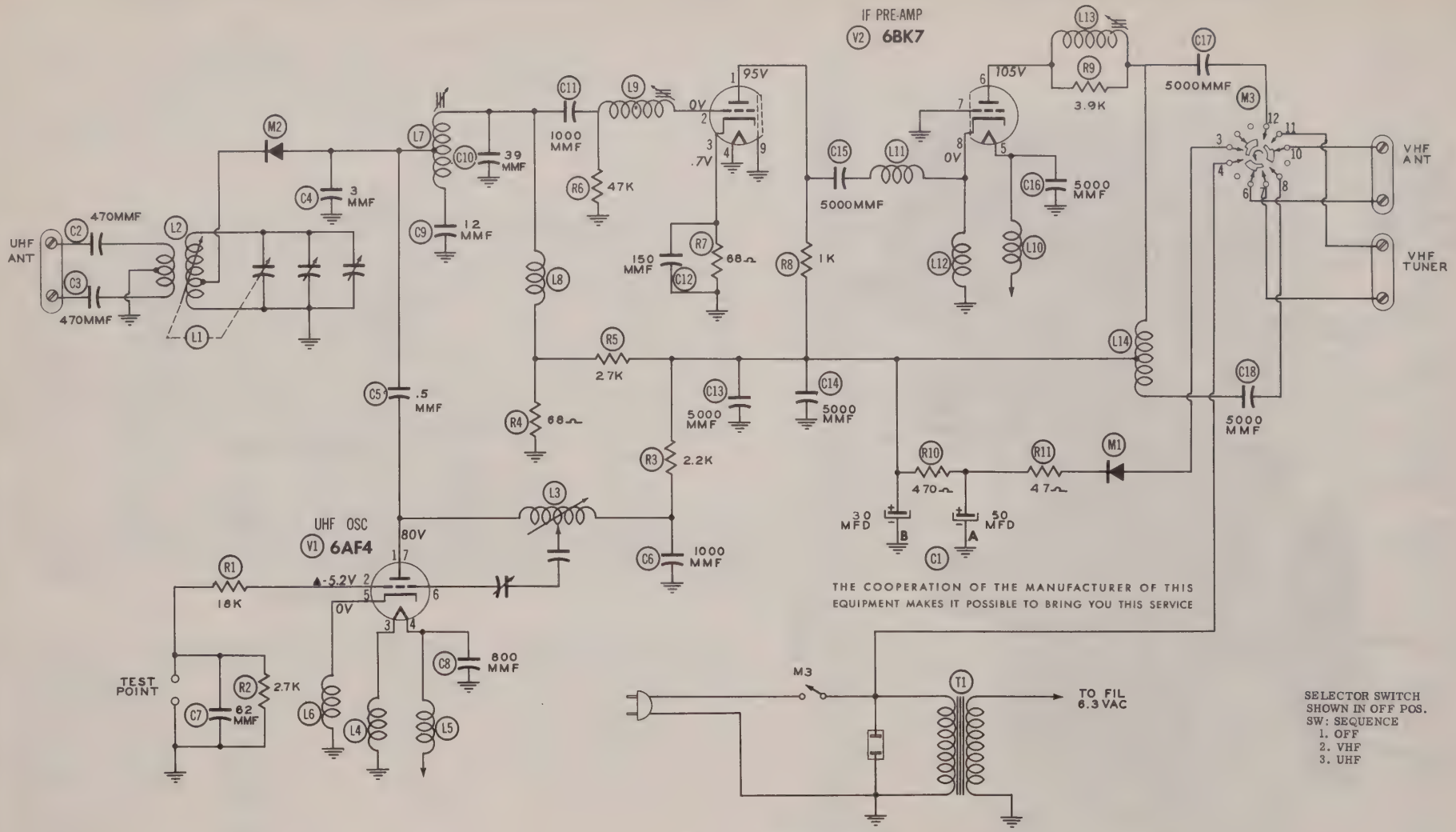
MOTOROLA MODEL TC-101, B



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AF4	†3KΩ	20.7KΩ	0Ω	.1Ω	0Ω	*	†3KΩ		
V 2	6BK7	†1.5KΩ	47KΩ	68Ω	0Ω	.1Ω	†517Ω	0Ω	1.8Ω	0Ω

ALL MEASUREMENTS TAKEN IN UHF POSTION
† MEASURED TO OUTPUT OF M1
▲ TAKEN WITH VACUUM TUBE VOLTMETER
* NO TERMINAL ON SOCKET

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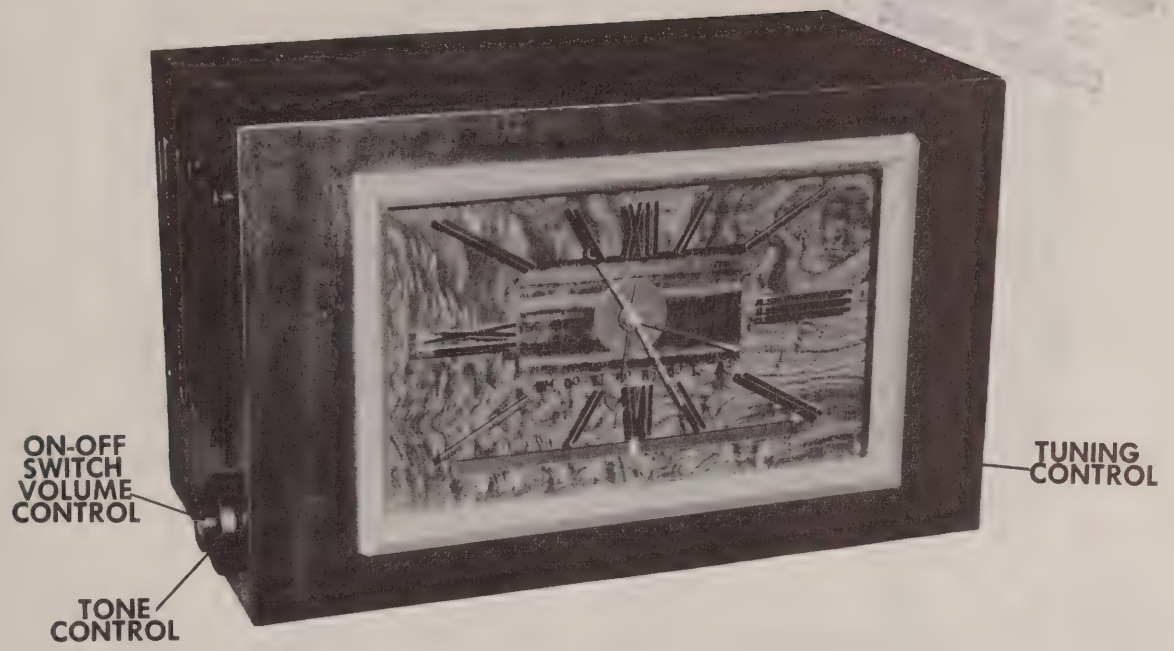
196-6

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MOTOROLA
MODEL 62CW1 (Ch. HS-324)



MOTOROLA
MODEL 62CW1 (Ch. HS-324)

TRADE NAME	Motorola Model 62CW1 (Ch. HS-324)
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago 51, Ill.
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (Six)	Types 12BD6 RF Amp., 12BE6 Conv., 12BD6 IF Amp., 12AT6 Det.-AVC-AF Amp., 35C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles — RATING .34 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535 - 1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Turn tuning gang fully closed and set edge of pointer saddle to coincide with index mark at left end of saddle bar.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V2). Low side to B-.	455KC (400~mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620 KC	"	"	A5	"
3.		Loop	1400 KC	Tune to 1400 KC signal	"	A6, A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		MOTOROLA PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	12BD6	12BD6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3	IF Amplifier	12BD6	12BD6	7BK	
V4	Det.-AVC-AF Amp.	12AT6	12AT6	7BT	
V5	Audio Output	35C5	35C5	7CV	
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	23B620847	PRS150/50-		EDL5515		2N521	TVA-2453	Red
B	50	150		50		BR5015A		TC49	TVA-1414	Blue
C	50	150		PRS150/50						Orange
C2	100		21R115900	S1100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C3	100		21R115900	S1100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C4	100		21R115900	S1100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C5	100		21R115900	S1100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C6	.05	400	8R9816	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C7	.068	600	8R490261	P688-068						
C8	.01	400	8R9858	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C9	.01	400	8R9858	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C10	100		21R115900	S1100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C11	.002	600	8R9867	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C12	.005	600	8R9813	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C13	.01	600	8R9858	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C14	.02	400	8R9802	P488-02	DF-203	PTE4S2		PT412	4TM-S2	
C15	.047	400	8R490232	489ZGXY-05		PJ4S47		PT4147	4TM-S47	
C16	.068	600	8R490261	P688-068						

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Motorola PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1Meg	½	18B620828	QJ-420R *			UF16L	Tone - Panel
B	2Meg	½					UR26-T25	Volume - Tapped @ 240KΩ-rear
C	Switch						US-26	Attach to R1B

* CONCENTRIKIT EQUIVALENT - KIT K-5, BASE ELEMENTS & SHAFTS B11-137 & P1-024 (Panel), B13-139X & R4-106 (Rear) & SWITCH 76-1

RESISTORS

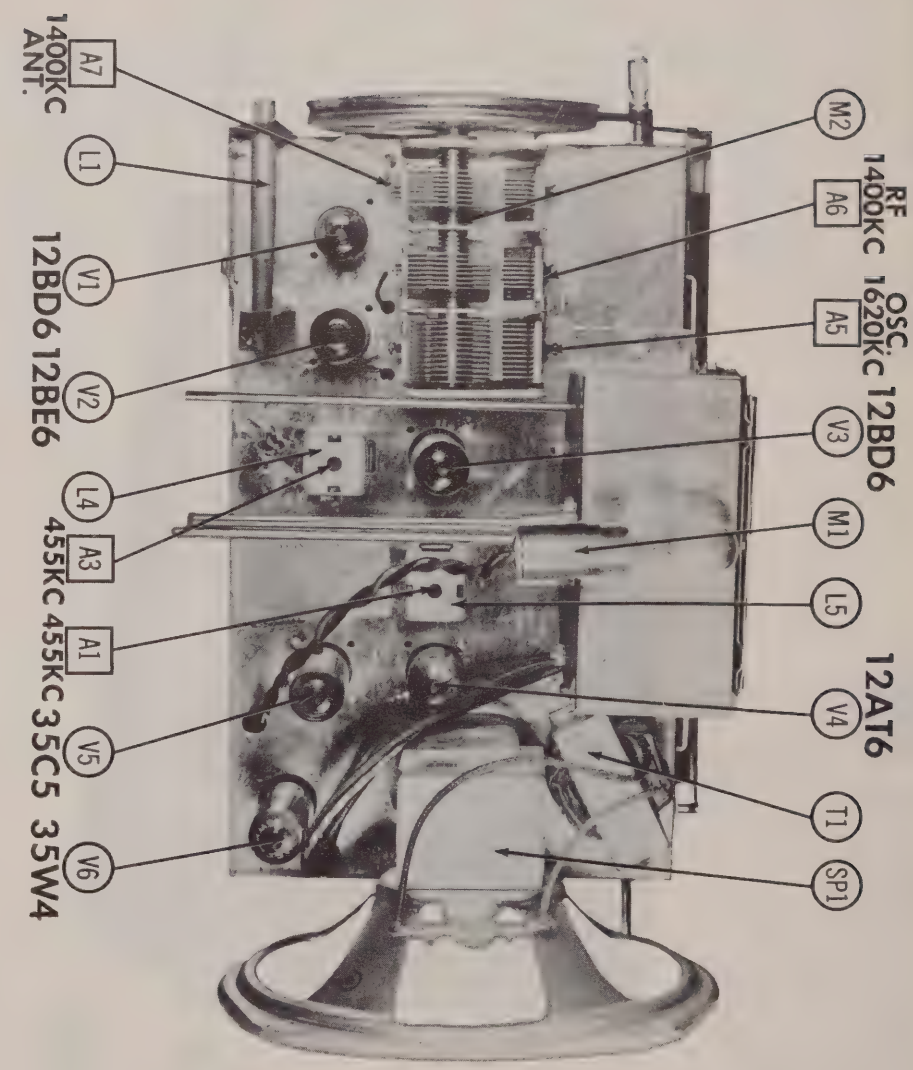
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R2	1Meg	½	6R6004	BTS-1Meg	
R3	47Ω	½	6R5550		
R4	470Ω	½	6R6090		
R5	220KΩ	½	6R6015	BTS-220K	
R6	47KΩ	½	6R6056	BTS-47K	
R7	180Ω	½	6R5660	BTS-180	
R8	2.2Meg	½	6R3927	BTS-2.2Meg	
R9	47KΩ	½	6R6056	BTS-47K	
R10	470KΩ	½	6R6032	BTS-470K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R11	68KΩ	½	6R6074	BTS-68K	
R12	10Meg	½	6R2109	BTS-10Meg	
R13	470KΩ	½	6R6032	BTS-470K	
R14	470KΩ	½	6R6032	BTS-470K	
R15	150Ω	½	6R6373	BTS-150	
R16	27Ω	½	6R5683		
R17	150Ω	2			
R18	560Ω	1	6R5584	BTA-560	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.8KΩ	3.96Ω	394Ω	.49Ω	25B620855	A-3849	A-3018	RO-301 ①	S-1X ①	①Drill one new mtg. hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	JENSEN PART No.	QUAM PART No.	
SP1	6"	PM	3.96Ω	50C620827 50C621190 ①	ST-108 Mod.P6-X	6A1	① Alternate 6" speaker.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	MOTOROLA PART No.	MERIT PART No.	IRC PART No.	
L1	Loop Ant	3.2Ω		24K620857			
L2	RF Coil	3Ω	9Ω	24K620846			
L3	Osc. Coil	.8Ω	8Ω	24K620849	BC-397 *		
L4	Input IF	17Ω	17Ω	25C485553	BC-352		
L5	Output IF	17Ω	17Ω	24K485555	BC-355		

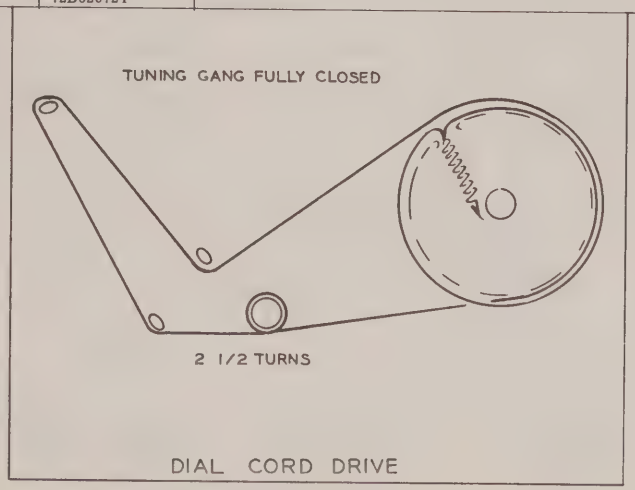
* Drill mounting hole.

DIAL LIGHTS

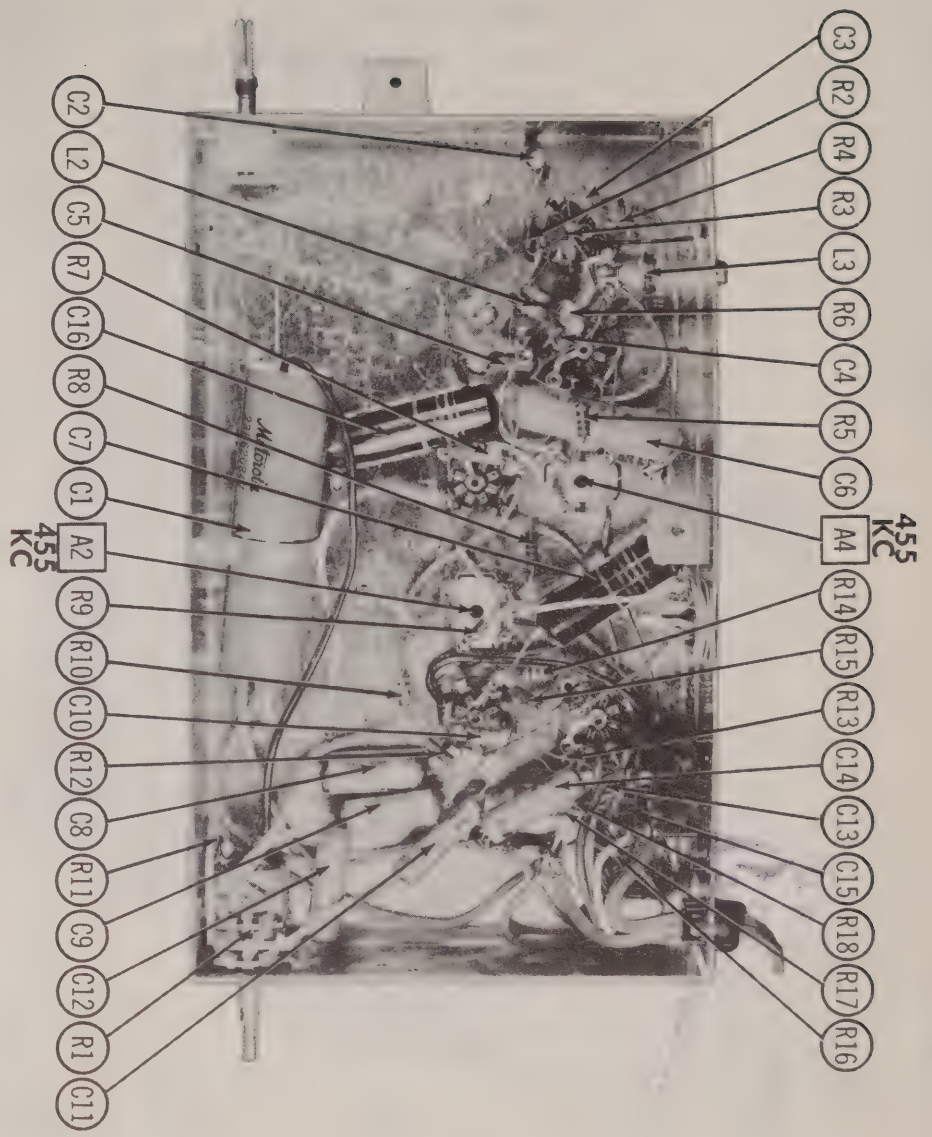
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MOTOROLA PART No.		
M1	Bayonet	110	10W	Clear	65K691040		Type #C7

MISCELLANEOUS

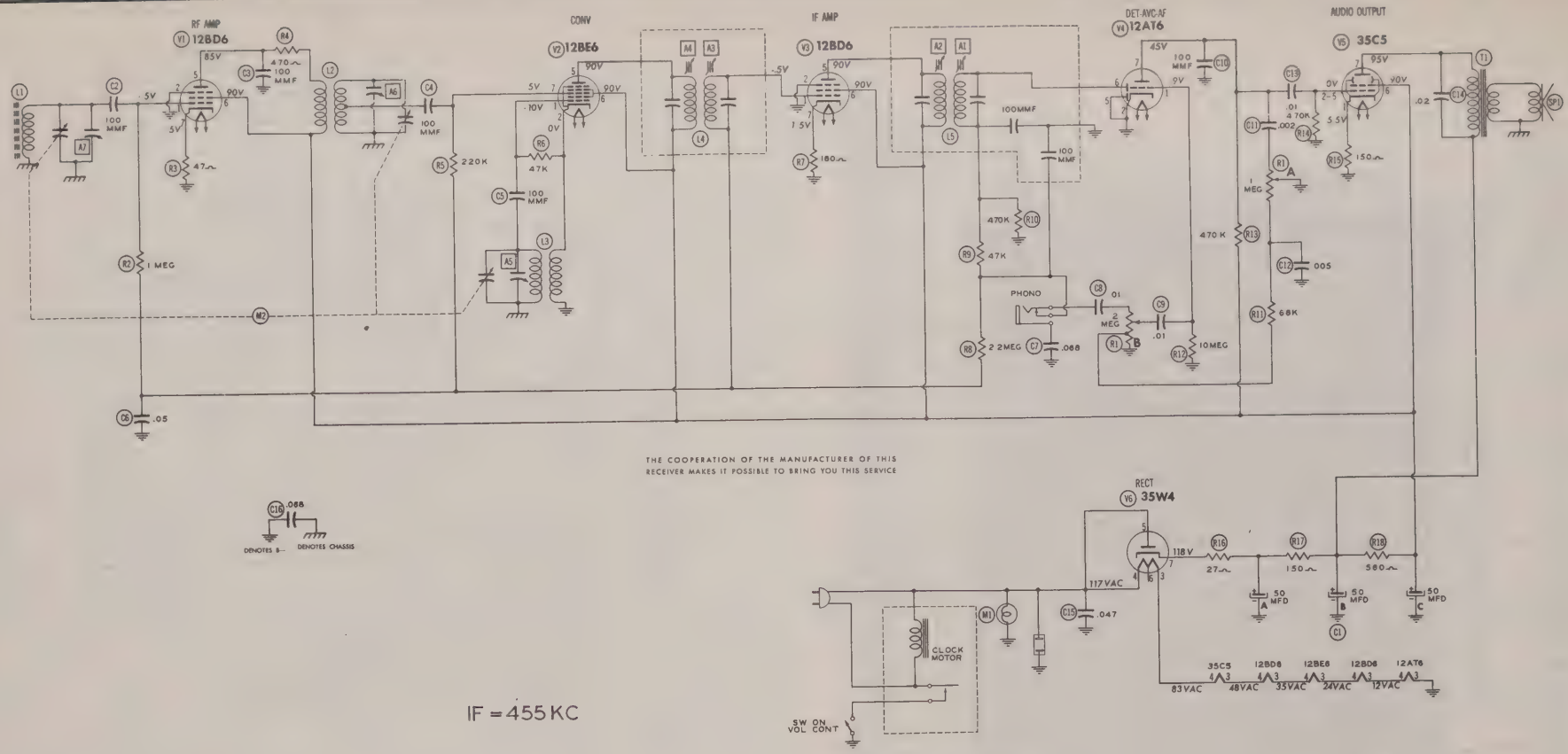
ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M2	Tuning capacitor	19C620845	24-333MMF, 24-333MMF, 40-183MMF (With pulley)
	Cabinet	16E620799	Red-Brown Mahogany, includes grille cloth only
	Back Cover	64C620806	
	Pointer	1K620834	
	Knob	36K600986	Clock, Walnut (3 Used)
	Knob	36B620809	Tone, Walnut
	Knob	36B620807	Volume, Walnut
	Knob	36B620808	Tuning, Walnut
	Clock	72D620724	



CHASSIS—BOTTOM VIEW



MOTOROLA
MODEL 62CW1 (Ch. HS-324)



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BD6	3.7Meg	0Ω	12Ω	22Ω	†1.2KΩ	†737Ω	47Ω
V 2	12BE6	47KΩ	.8Ω	22Ω	31Ω	†737Ω	†737Ω	3 Meg
V 3	12BD6	2.7Meg	0Ω	31Ω	39Ω	†737Ω	†737Ω	180Ω
V 4	12AT6	10 Meg	0Ω	0Ω	12Ω	0Ω	470KΩ	†470KΩ
V 5	35C5	150Ω	470KΩ	39Ω	57Ω	470KΩ	†737Ω	†471Ω
V 6	35W4	INF	INF	57Ω	66Ω	66Ω	64Ω	60KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V6

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196-7

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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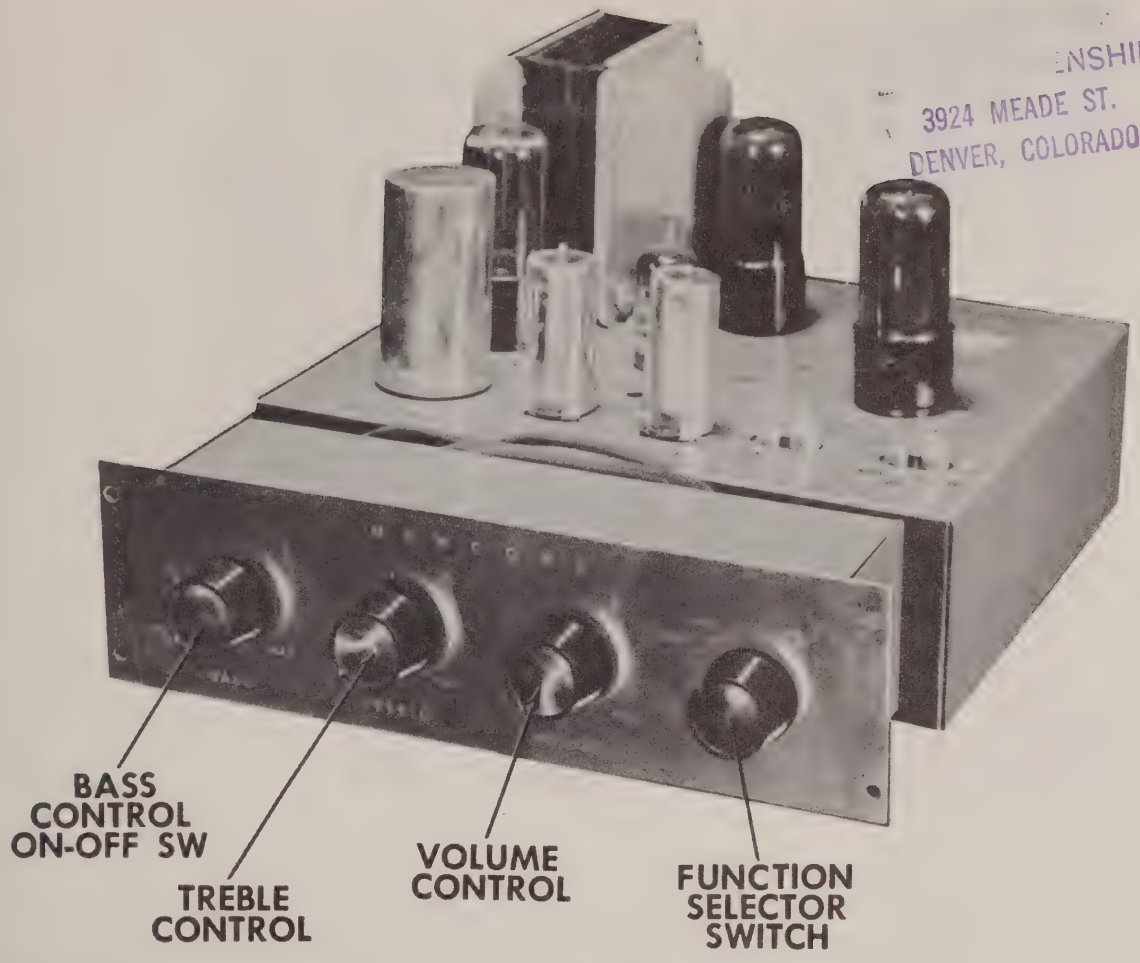
NEWCOMB
MODEL A-104R



NEWCOMB
MODEL A-104R

TRADE NAME	Newcomb Model A-104R
MANUFACTURER	Newcomb Audio Products Co, . 6824 Lexington Ave., Hollywood 38, California
TYPE SET	AC Operated 4 Channel Audio Amplifier
TUBES (Six)	Types 6AV6 Pre. Amp., 6AV6 AF Amp., 12AX7 AF Amp., Phase Inv., (2) 6V6GT Audio Output, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .64 Amp. @ 117 Volts AC

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PARTS LIST AND DESCRIPTIONS

NEWCOMB
MODEL A-104R

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		NEWCOMB PART No.	STANDARD REPLACEMENT		
V1	Pre-Amplifier	6AV6	6AV6	7BT	
V2	AF Amplifier	6AV6	6AV6	7BT	
V3	AF Amplifier-Phase Converter	12AX7	12AX7	9A	
V4	Audio Output	6V6GT	6V6GT	7S	
V5	Audio Output	6V6GT	6V6GT	7S	
V6	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	NEWCOMB PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▲20	475		AFH4-19		DO18		FP474	TVL-4830	
B	■10	475		PRS50/25		BR255A		TC36	TVA-1306	
C	▲10	475								
D	25	50								
C2	4	450		PRS450/30		BR445		TC70	TVA-1702	
C3	20000			SI20000		TM5S2			5HK-S2	
C4	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C5	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C6	30			SI30	D6-300	5W5Q3	GP1K-300		MS-43	
C7	.022	600		P688-022	DF-203	PTE6122		PT6122	6TM-S22	
C8	.022	600		P688-022	DF-203	PTE6122		PT6122	6TM-S22	
C9	.004	600		P688-004	D6-402	PTE6D4	GP2-333-402	PT624	6TM-D4	
C10	47			SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C11	.047	600		P688-047	DF-503	PTE6147		PT6147	6TM-S47	
C12	20000			SI20000		TM5S2			5HK-S2	
C13	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C14	750			SI750	D6-751		GP2K-751	UC-5375	5GA-T75	
C15	.0033	600		P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D33	
C16	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C17	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C18	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C19	.047	600		P688-047	D6-503	PTE6S47		PT6147	6TM-S47	
C20	.047	600		P688-047	D6-503	PTE6S47		PT6147	6TM-S47	
C21	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	

CONTROLS

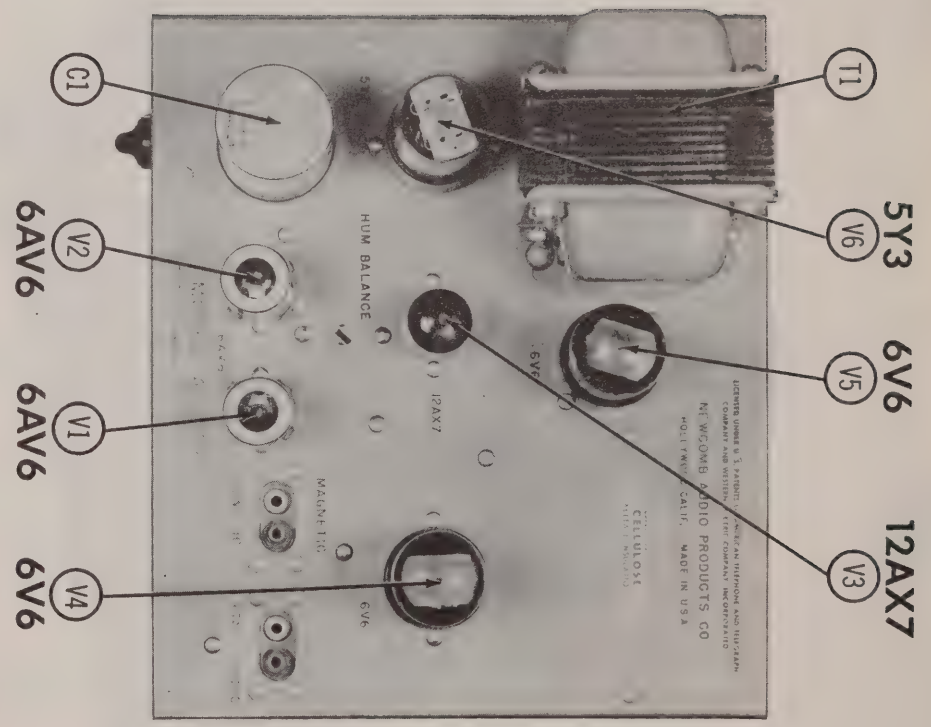
ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	NEWCOMB PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	1/2	RV-58	Q18-133X	AT-88	ABT-62	UT-427	Volume Tap @ 80KΩ
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A
R2	5 Meg	1/2	RV-60					Treble Tap @ 800KΩ
R3A	2 Meg	1/2	RV-73	Q13-139	AG-66-Z	AB-76	U-55	Bass
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R3A
C	Switch		Not Req.	76-1	SWB	KB-1	US-26	Attach to R3A
R4	100Ω	1	RV-75					Hum Balance-Wire Wound

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	NEWCOMB PART No.	IRC PART No.	
R5	560KΩ	1/2		BTS-560K	
R6	100K Ω	1/2		BTS-100K	
R7	82KΩ	1/2		BTS-82K	
R8	100KΩ	1/2		BTS-100K	
R9	100KΩ	1/2		BTS-100K	
R10	22KΩ	1/2		BTS-22K	
R11	27KΩ	1/2		BTS-27K	
R12	18 Meg	1/2		BTS-18 Meg	
R13	270KΩ	1/2		BTS-270K	
R14	12KΩ	1/2		BTS-12K	
R15	10KΩ	1/2		BTS-10K	
R16	100KΩ	1/2		BTS-100K	
R17	560KΩ	1/2		BTS-560K	
R18	100KΩ	1/2		BTS-100K	
R19	100KΩ	1/2		BTS-100K	
R20	18 Meg	1/2		BTS-18 Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	NEWCOMB PART No.	IRC PART No.	
R21	270KΩ	1/2		BTS-270K	
R22	18 Meg	1/2		BTS-18 Meg	
R23	100Ω	1/2		BTS-100	
R24	270KΩ	1/2		BTS-270K	
R25	560K Ω	1/2		BTS-560K	
R26	10KΩ	1/2		BTS-10K	
R27	100KΩ	1/2		BTS-100K	
R28	100KΩ	1/2		BTS-100K	
R29	56KΩ	1/2		BTS-56K	
R30	5600Ω	1/2		BTS-5600	
R31	560KΩ	1/2		BTS-560K	
R32	250Ω	5		1 3/4A-250	
R33	560KΩ	1/2		BTS-560K	
R34	2200Ω	1		BTA-2200	
R35	27KΩ	1/2		BTS-27K	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	NEWCOMB PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .64A	650VCT .085ADC	5VAC @ 2A	6.3VAC @ 1.8A	TR-166	PC-8409	P-3151	PV-100 ①	R-11A ①

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		NEWCOMB PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	10KΩ CT	16Ω tap @ 8Ω	530Ω CT	.88Ω tap @ .48Ω	TR-165	A-3335 ①		RO-1101		① Drill one new mounting hole.

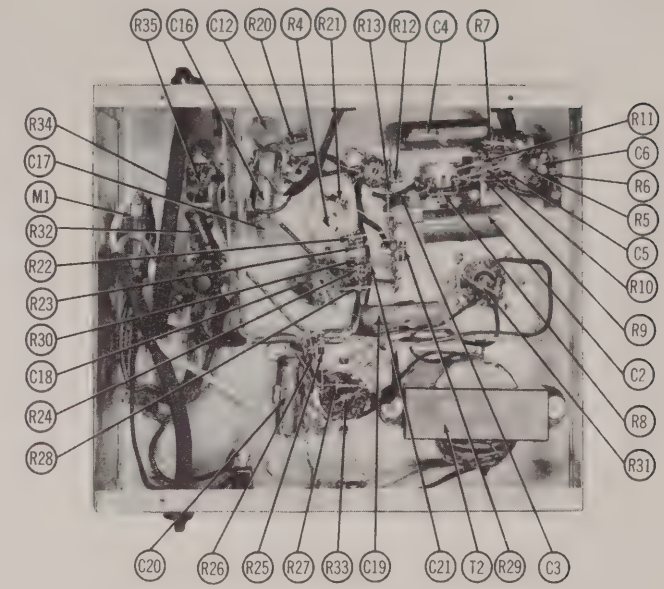
FUSES

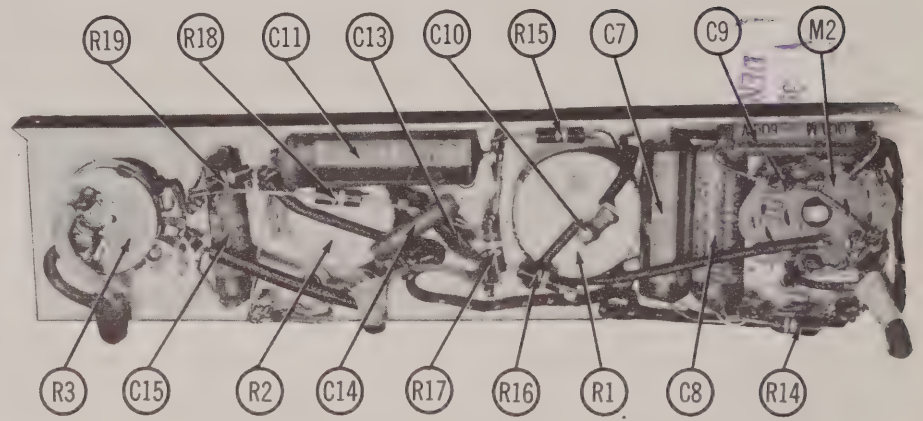
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			NEWCOMB PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1A 250V			312001 (3AG-1A)	357001	AGC-1	4405

MISCELLANEOUS

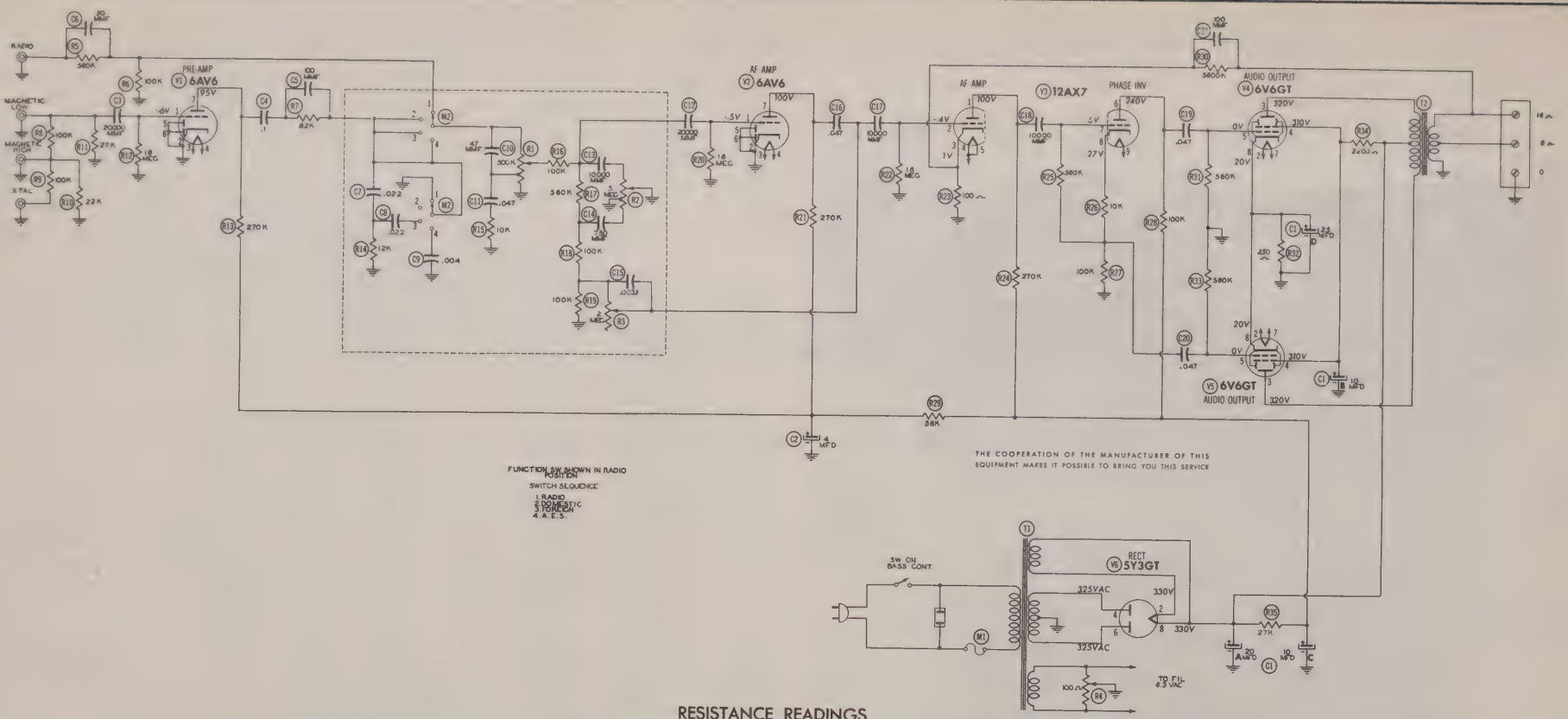
ITEM No.	PART NAME	NEWCOMB PART No.	NOTES
M2	Function Selector Switch	SY-82	

CHASSIS—BOTTOM VIEW





NEWCOMB MODEL A-104R



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AV6	18 Meg	0Ω	23Ω	23Ω	0Ω	0Ω	†350KΩ		
V 2	6AV6	18 Meg	0Ω	23Ω	23Ω	0Ω	0Ω	†350KΩ		
V 3	12AX7	†300KΩ	18 Meg	100Ω	23Ω	23Ω	†125KΩ	660KΩ	110KΩ	23Ω
V 4	6V6GT	0Ω	23Ω	†250Ω	†2.2KΩ	560KΩ	INF	23Ω	250Ω	
V 5	6V6GT	0Ω	23Ω	†280Ω	†2.2KΩ	560KΩ	100KΩ	23Ω	250Ω	
V 6	5Y3GT	0Ω	1.8 Meg	23Ω	190Ω	23Ω	185Ω	INF	1.8Meg	

† MEASURED FROM PIN 8 OF V6

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1. DC Voltage measurements are at 20,000 ohms per volt, AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 Volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

PHOTOFACT* Folder

OLYMPIC MODELS 17C44, 17K41, 42, 50, 17T40, 48 (Ch. TK17), 20C45, 52, 53, 20D49, 20K43, 51, 20T46, 47 (Ch. TL20)

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MODEL 20K43

OLYMPIC MODELS 17C44, 17K41, 42, 50, 17T40, 48 (Ch. TK17), 20C45, 52, 53, 20D49, 20K43, 51, 20T46, 47 (Ch. TL20)

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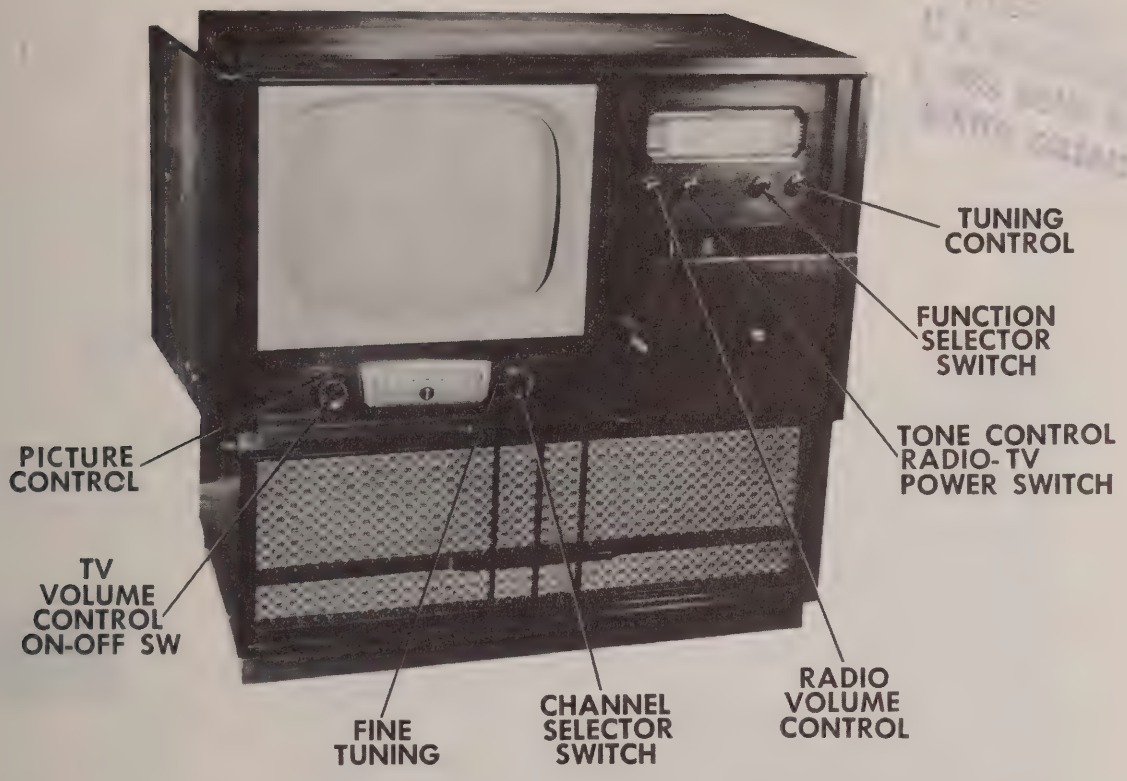

OLYMPIC MODELS 17C44, 17K41, 42, 50, 17T40, 48 (Ch. TK17), 20C45, 52, 53, 20D49, 20K43, 51, 20T46, 47 (Ch. TL20)

OLYMPIC 20K43

TRADE NAME	Olympic Models 17C44, 17K41, 17K42, 17K50, 17T40, 17T48 (Ch. TK17), 20C45, 20C52, 20C53, 20D49, 20K43, 20K51, 20T46, 20T47 (Ch. TL20)
MANUFACTURER	Olympic Radio & Tel. Inc., 34-01 38th. Ave., Long Island City 1, N.Y.
TYPE SET	TV-Radio-Phono Combination
TUBES	Twenty-four
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 1.56 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 26.25MC, Sound IF 21.75MC (Intercarrier) (TV), 540-1620KC (Radio)

INDEX

Alignment Instructions 6, 7
Drive Cord Stringing (Radio) 19
Disassembly Instructions 11
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions ..... 13 thru 16
Photographs
- Cabinet - Rear View 11
- Capacitor and Alignment Identification 4, 9
- Chassis - Bottom View (Radio) 20
- Chassis - Top View (Radio) 20
- Chassis - Top View (TV) 3
- RF Tuner 10
- Resistor and Inductor Identification 12, 17

Resistance Measurements 8
Schematic (Radio) 18
Schematic (TV) 2
Servicing in the Field 19
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

FOR SERVICE INFORMATION ON RECORD CHANGER, SEE V-M MODEL 950 PHOTOFACT SET 107, FOLDER 13, OR RECORD CHANGER MANUAL CM-3. ALSO, SEE MODEL 950 SUPPLEMENT PHOTOFACT SET 131, FOLDER 17.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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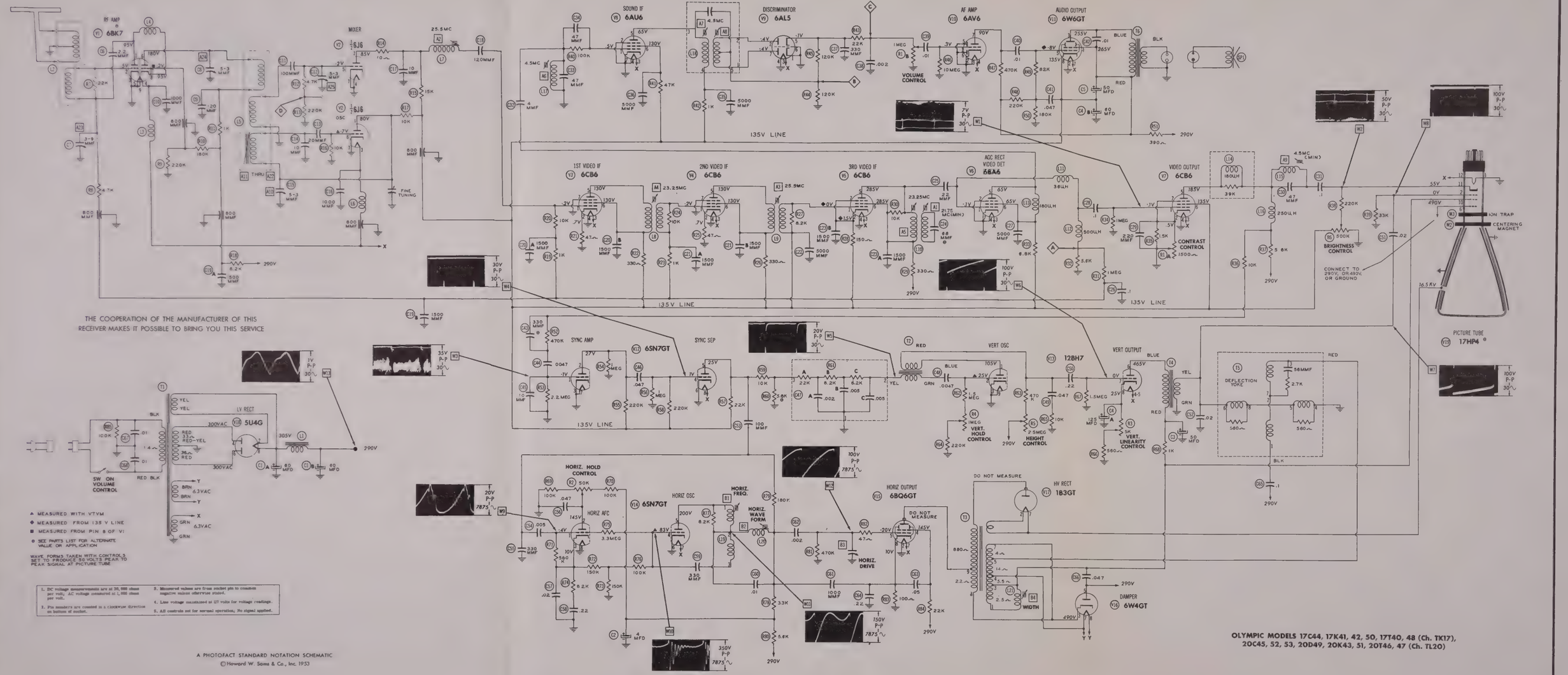
DATE 3-53 SET 196 FOLDER 9


RF AMP 6BK7
MIXER
25.5MC
SOUND IF 6AU6
DISCRIMINATOR 6AL5
AF AMP 6AV6
AUDIO OUTPUT 6W6GT
VOLUME CONTROL
135V LINE
1ST VIDEO IF 6CB6
2ND VIDEO IF 6CB6
3RD VIDEO IF 6CB6
AGC RECT VIDEO DET 6AL5
VIDEO OUTPUT 6CB6
CONTRAST CONTROL
BRIGHTNESS CONTROL
CONNECT TO 290V, OR 490V, OR GROUND
ION TRAP
CENTERING MAGNET
16.5 KV
PICTURE TUBE 17HP4
SYNC AMP 6SN7GT
SYNC SEP
VERT OSC
12BH7
VERT OUTPUT
VERT. HOLD CONTROL
HEIGHT CONTROL
VERT. LINEARITY CONTROL
DEFLECTION YOKE
HORIZ. HOLD CONTROL
HORIZ OSC 6SN7GT
HORIZ AFC
HORIZ. FREQ.
HORIZ. WAVE FORM
HORIZ. DRIVE
HORIZ OUTPUT 6BQ6GT
DO NOT MEASURE
HV RECT 1B3GT
WIDTH
DAMPER 6W4GT
LV RECT 5U4G
SW. ON VOLUME CONTROL
FINE TUNING
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
▲ MEASURED WITH VTVM
◆ MEASURED FROM 135 V LINE
■ MEASURED FROM PIN 8 OF V1
⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
1. DC voltage measurements are at 20,000 ohms per volt; AC voltage measured at 1,000 ohms per volt.
2. Measured values are from socket pin to common negative unless otherwise stated.
3. Pin numbers are counted in a clockwise direction on bottom of socket.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation, No signal applied.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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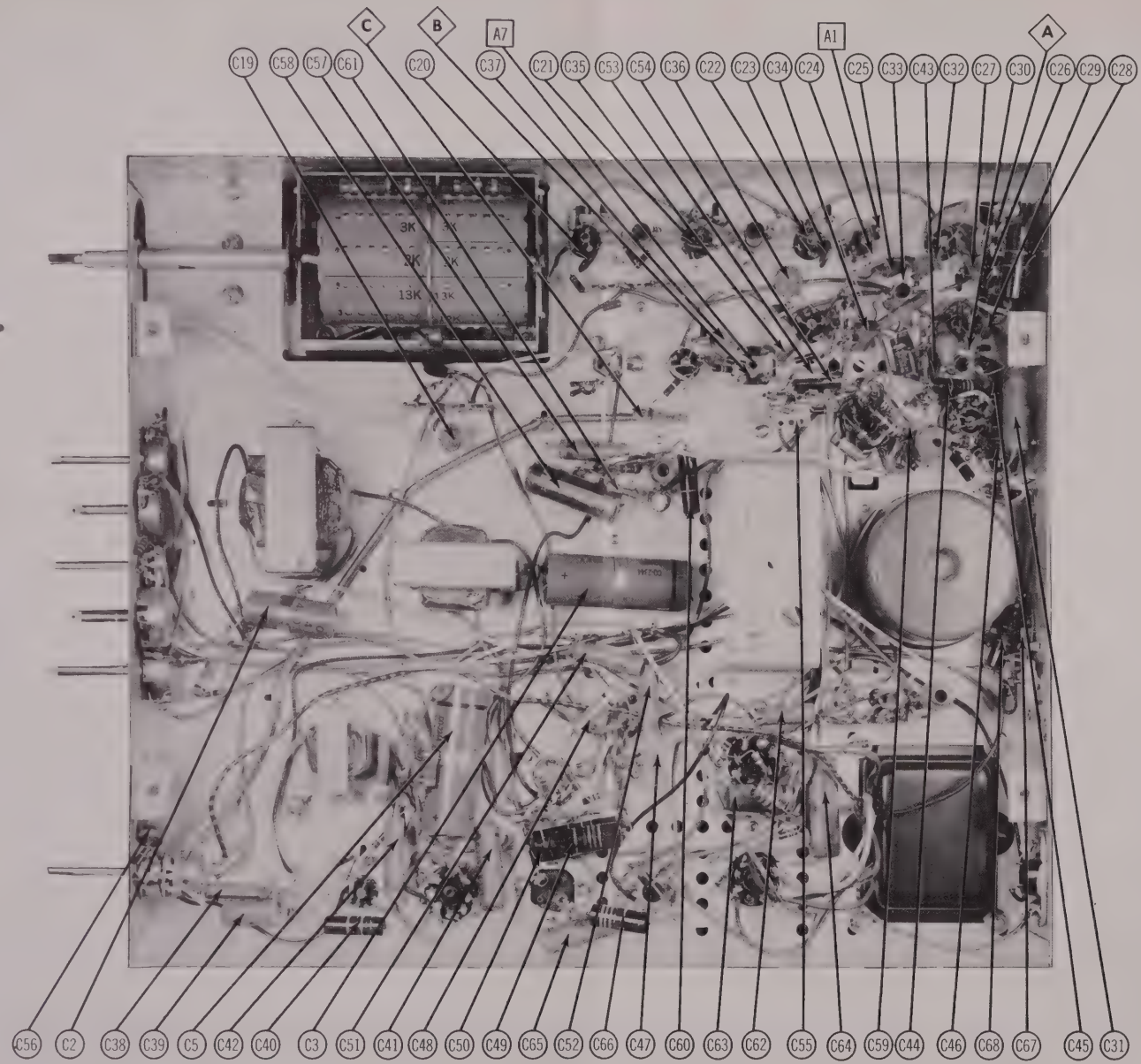
OLYMPIC MODELS 17C44, 17K41, 42, 50, 17T40, 48 (Ch. TK17), 20C45, 52, 53, 20D49, 20K43, 51, 20T46, 47 (Ch. TL20)

OLYMPIC MODELS 17C44, 17K41, 42, 50, 17T40, 48 (Ch. TK17), 20C45, 52, 53, 20D49, 20K43, 51, 20T46, 47 (Ch. TL20)

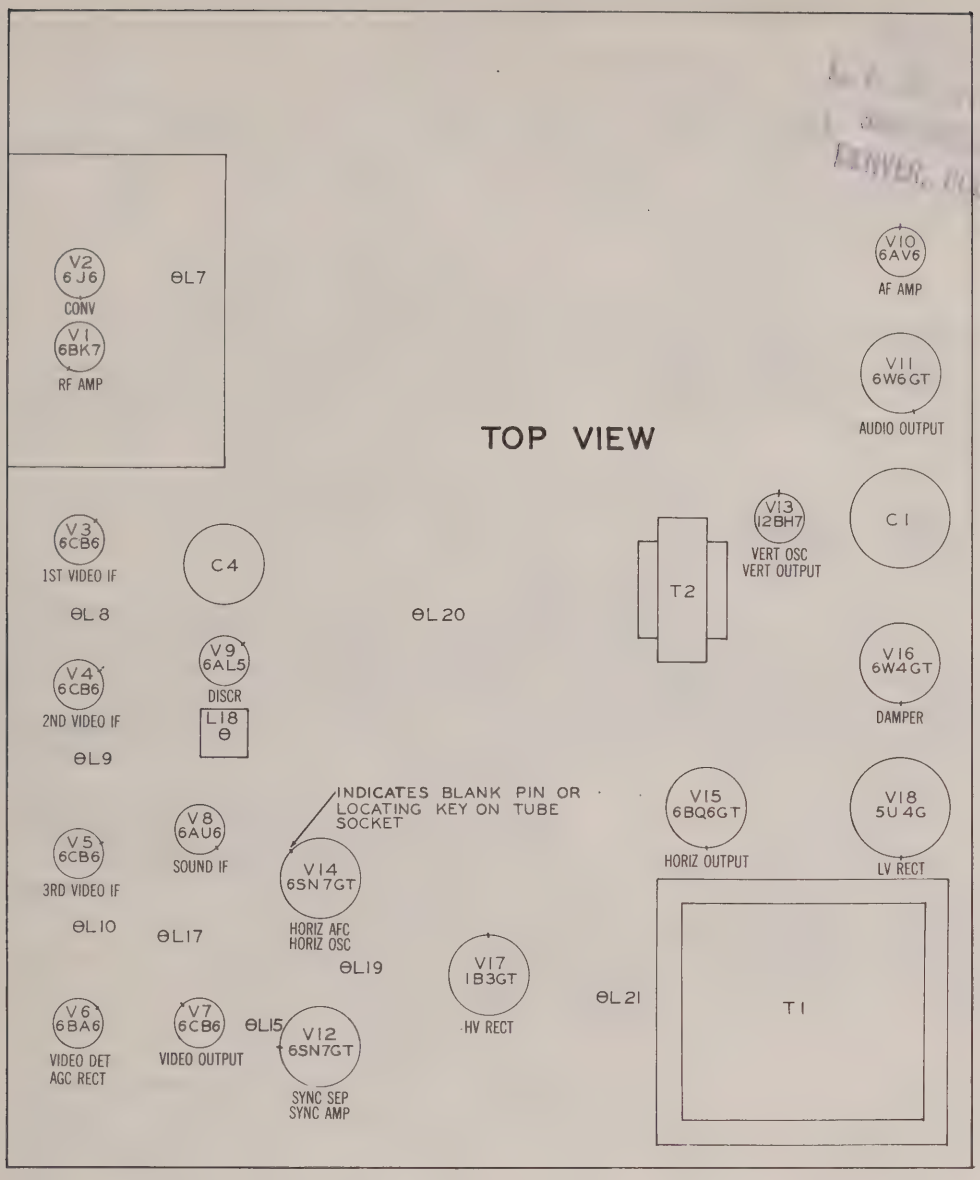
CHASSIS TOP VIEW

L. F. [illegible]
3028 WEAVER ST.
DENVER, COLORADO



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V18

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V19
Has pic, no sound - V8, V9, V10, V11
Overloaded picture - V6

SYNC FAILURE
No vert. sync - V12, V13
No horiz. sync - V12, V14
No vert. or horiz. sync - V12

SWEEP FAILURE
No raster, has sound - V14, V15, V16, V17, V19
No vertical deflection - V13
Poor vert. linearity or foldover - V13
Poor horiz. linearity or foldover - V14, V15, V16
Narrow picture - V14, V15, V16, V17, V18
Vert. off freq. - V12, V13
Horiz. off freq. - V12, V14

OLYMPIC MODELS 17C44, 17K41, 42, 50, 17T40, 48 (Ch. TK17), 20C45, 52, 53, 20D49, 20K43, 51, 20T46, 47 (Ch. TL20)

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V14).

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C26. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	21.75MC (Unmod.)	Any	DC probe to point (A). Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	"	"	25.5MC	"	"	A2, A3	Adjust for maximum deflection.
3.	"	"	23.25MC	"	"	A4, A5	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.75MC 26.25MC	Any	Vert. Amp. to point (A). Low side to chassis.		Check for response similar to Fig. 1. If necessary retouch A2 thru A5 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (UNMOD)	Any	DC probe to point (B). Common to chassis.	A6, A7	Adjust for maximum deflection.
6.	"	"	"	"	DC probe to point (C). Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. thru 47KΩ to point (B). Low side to chassis.	A6, A7	Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
6.	"	"	"	"	"	Vert. Amp. thru 47KΩ to point (C). Common to chassis.	A8	Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

Set contrast control at maximum clockwise position.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.001MFD	High side to pin 1 (grid) of 6CB6 (V7). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe thru detector (Figure 4) to pin 11 of picture tube. Common to chassis.	A9	Adjust for MINIMUM deflection.

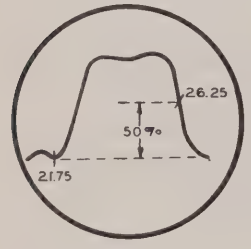


FIG. 1

FIG. 2

FIG. 3

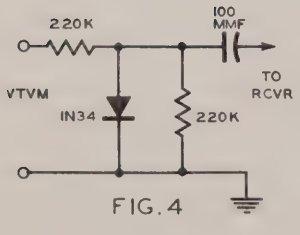


FIG. 4

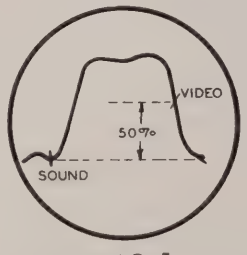


FIG. 5

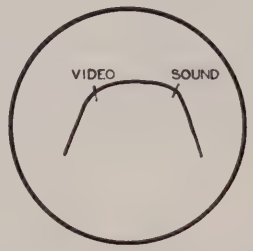


FIG. 6

TV ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A10.
It should be noted that this is an all channel oscillator circuit adjustment and should not be used to correct any individual channel. If adjustment of A10 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point (A). Low side to chassis.	A11	Adjust to place sound marker in sound trap notch as in Fig. 5. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A12	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A13	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A14	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A15	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A16	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A17	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A18	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A19	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A20	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A21	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A22	

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point (D). Low side to chassis.	A23, A24 A25	Adjust for response similar to Fig. 6.
10.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13			Check for response similar to Fig. 6. If markers fall below 70% on any channel make compromise adjustments of A23, A24 and A25 with channel switch set to that channel, then recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75M C	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

RADIO ALIGNMENT INSTRUCTIONS

Turn tuning gang fully closed and set pointer to coincide with left hand edge of first "5" in "55".
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Volun e control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

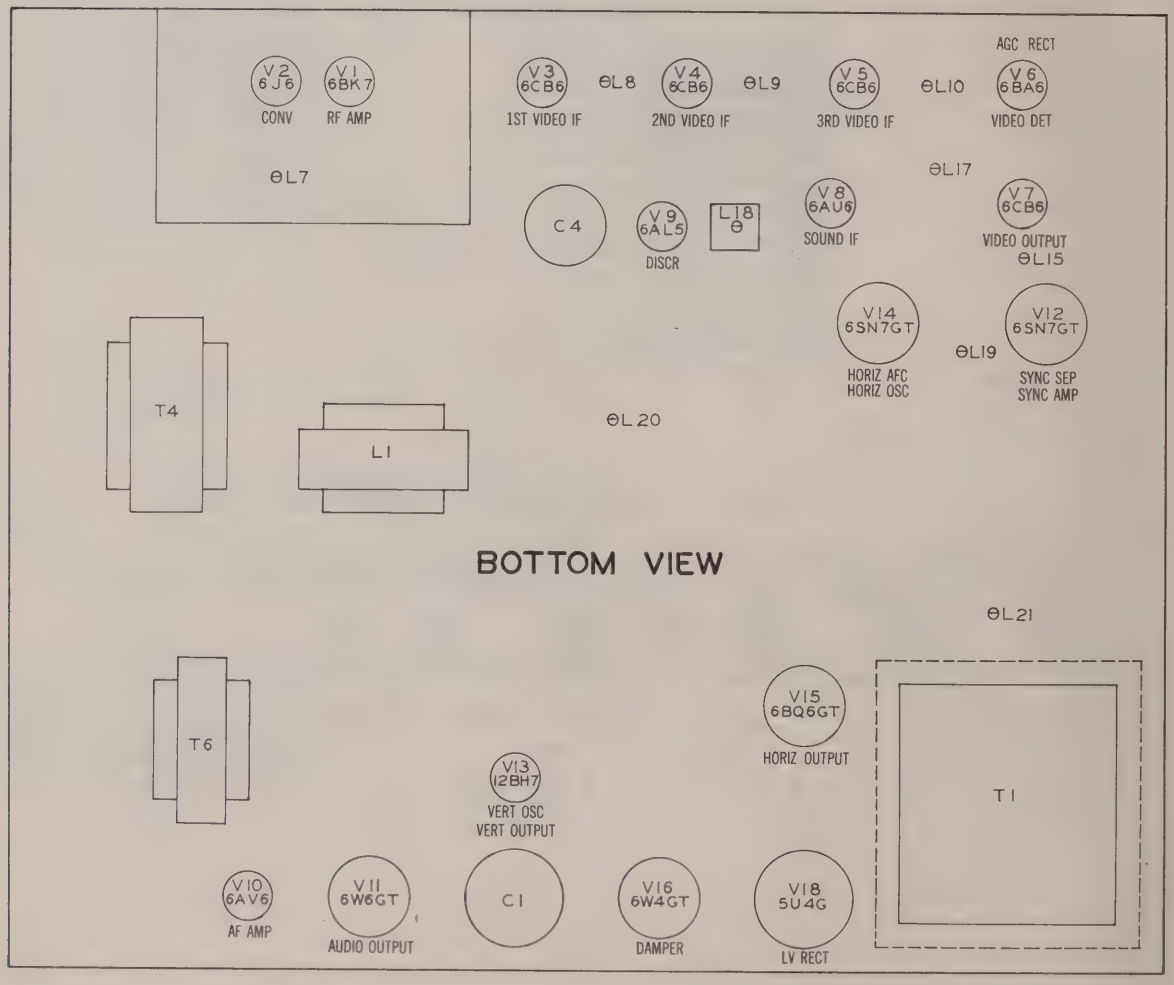
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
11.	.1MFD	High side to stator of antenna section of tuning gang. Low side to B-.	455KC (400∿Mod)	AM	Tuning gang fully open.	Across voice coil.	A26, A27, A28, A29	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
12.		Loop	1500KC	"	1500KC	"	A30, A31	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust in order given for maximum output. Repeat for greatest accuracy.

OLYMPIC MODELS 17C44, 17K41, 42, 50, 17T40, 48 (Ch. TK17), 20C45, 52, 53, 20D49, 20K43, 51, 20T46, 47 (Ch. TL20)

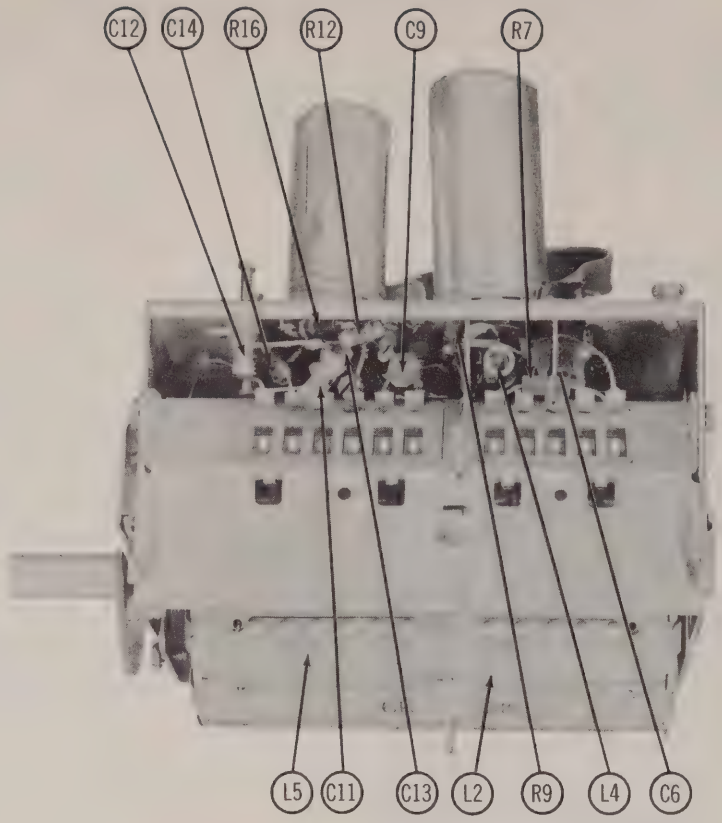
RESISTANCE MEASUREMENTS

Item*	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	1 Meg	0Ω	.1Ω	0Ω	†9.3KΩ	†110KΩ	INF	0Ω
V 2	6J6	#10KΩ	#15KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6CB6	1 Meg	47Ω	.1Ω	0Ω	#330Ω	#330Ω	0Ω		
V 4	6CB6	1 Meg	47Ω	.1Ω	0Ω	#330Ω	#330Ω	0Ω		
V 5	6CB6	#.4Ω	#150Ω	.1Ω	0Ω	†394Ω	†394Ω	#150Ω		
V 6	6BA6	5.6KΩ	0Ω	.1Ω	0Ω	#6.8KΩ	#6.8KΩ	0Ω		
V 7	6CB6	1 Meg	240Ω	.1Ω	0Ω	†5.7KΩ	#0Ω	240Ω		
V 8	6AU6	100KΩ	0Ω	.1Ω	0Ω	#1KΩ	#47KΩ	0Ω		
V 9	6AL5	0Ω	108KΩ	.1Ω	0Ω	200KΩ	0Ω	108KΩ		
V 10	6AV6	10 Meg	0Ω	0Ω	.1Ω	0Ω	0Ω	†470KΩ		
V 11	6W6GT	0Ω	0Ω	†680Ω	†454Ω	182KΩ	105KΩ	.1Ω	29KΩ	
V 12	6SN7GT	2.2Meg	#190KΩ	0Ω	190KΩ	#17.5KΩ	0Ω	0Ω	.1Ω	
V 13	12BH7	†1.5Meg	2.1Meg	0Ω	.1Ω	.1Ω	■2.6KΩ	1.5Meg	2.1KΩ	0Ω
V 14	6SN7GT	860KΩ	†75KΩ	300KΩ	250KΩ	†39KΩ	0Ω	.1Ω	0Ω	
V 15	6BQ6GT	INF	0Ω	INF	†22KΩ	470KΩ	470KΩ	.1Ω	100Ω	Top Cap ■22Ω
V 16	6W4GT	■23.5Ω	INF	88KΩ	■21Ω	†64Ω	■1KΩ	■18Ω	■18Ω	
V 17	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ■902Ω
V 18	5U4G	INF	65KΩ	INF	33Ω	INF	36Ω	INF	65KΩ	
V 19	20HP4A	0Ω	33KΩ	Pin 6 0Ω	Pin 10 ■23.5Ω	Pin 11 270KΩ	Pin 12 .1Ω			

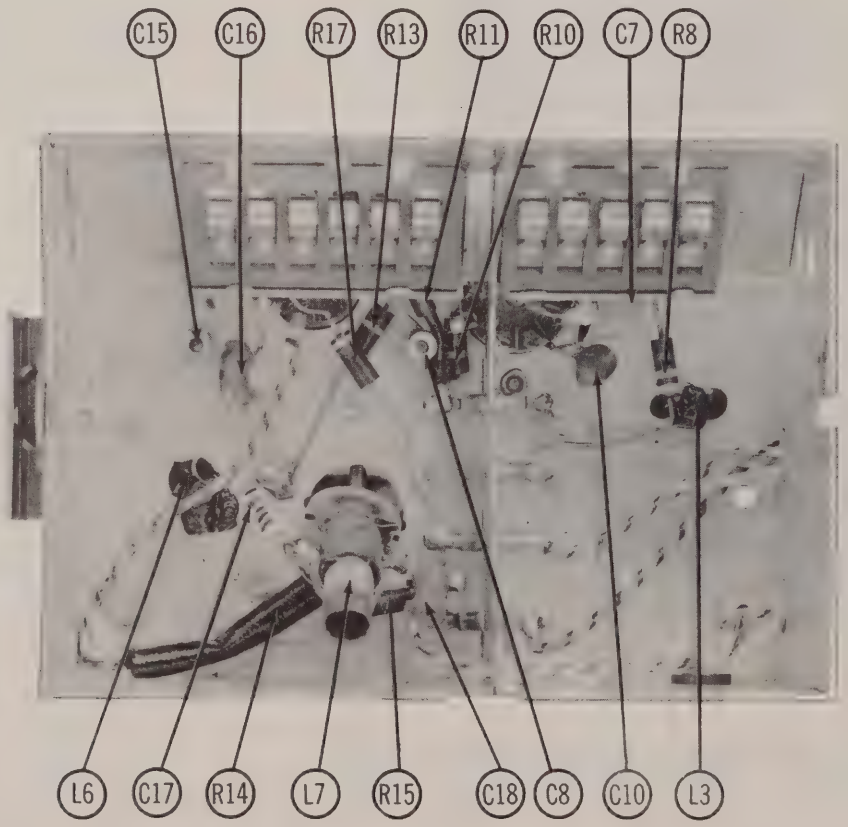
† MEASURED FROM PIN 8 OF V18
# MEASURED FROM 135 VOLT LINE
■ MEASURED FROM PIN 3 OF V16



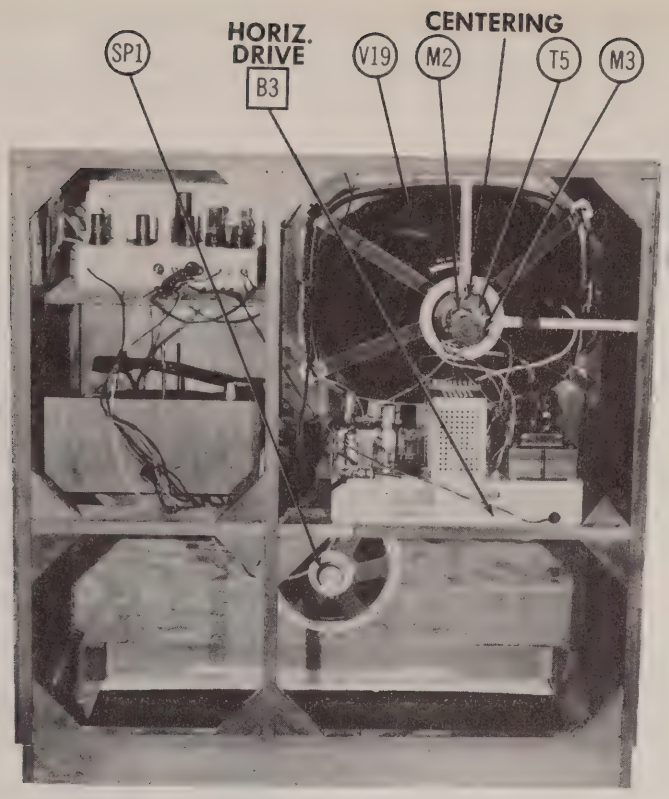
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

If unable to obtain satisfactory horizontal synchronization by means of the horizontal hold control, set control in the center of its range and adjust the horizontal frequency slug (B1) for horizontal synchronization.

If horizontal sync is not obtained by above means it may be necessary to adjust the horizontal waveform slug (B2).

Connect the vertical amplifier of an oscilloscope through a .01MFD capacitor to the junction of L19 and L20. Connect low side of scope to chassis and observe the waveform on scope screen.

Adjust B2 until the broad and narrow peaks are of equal amplitude as in Fig. 7.

Adjust the horizontal drive trimmer (B3) for the best compromise between brightness and horizontal linearity.

Do not adjust to the point where a vertical white line appears in the picture.

Adjust the width control slug (B4) for a picture slightly wider than necessary to fill the picture mask horizontally.

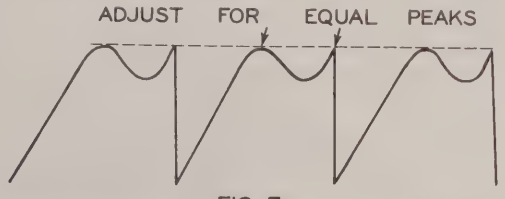


FIG. 7

DISASSEMBLY INSTRUCTIONS

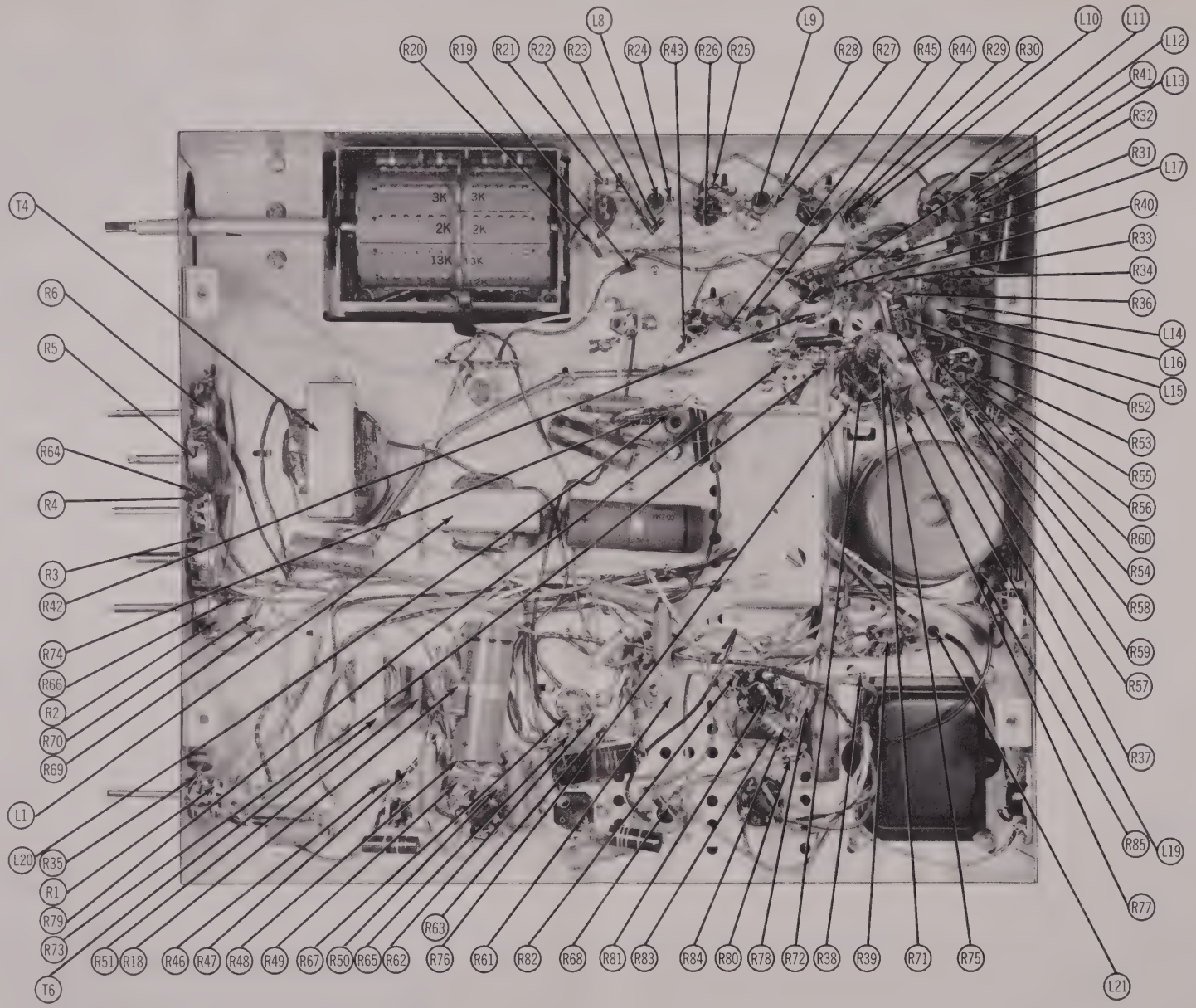
TV

1. Remove 4 push-on type control knobs from front panel.
2. Remove 2 wood and 2 metal screws. Remove rear cover.
3. Disconnect built-in antenna and speaker.
4. Disconnect Input Plug from back of radio chassis.
5. Remove 5 chassis bolts. Remove chassis.
6. Remove 4 speaker nuts. Remove speaker. (Not necessary for chassis removal).

RADIO

1. Remove 4 push on type control knobs.
2. Remove 8 wood screws. Remove rear cover.
3. Disconnect phono audio plug, phono motor plug, and speaker plugs from both back side of TV and Radio chassis.
4. Remove 3 chassis bolts. Remove chassis.

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST
DENVER, COLORADO



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BK7	6BK7	9AJ	
B	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector-AGC Rectifier	6BA6	6BA6	7BK	
V7	Video Output	6CB6	6CB6	7CM	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Discriminator	6AL5	6AL5	6BT	
V10	AF Amplifier	6AV6	6AV6	7BT	
V11	Audio Output	6W6GT	6W6GT	7S	
V12	Sync Separator-Sync Amplifier	6SN7GT	6SN7GT	8BD	
V13	Vert. Oscillator-Vert. Output	12BH7	12BH7	9A	
V14	Horiz. AFC-Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V15	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V16	Damper	6W4GT	6W4GT	4CG	
V17	HV Rectifier	1B3GT	1B3GT	3C	
V18	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V19A	20HP4A	17HP4		12C	
		17RP4		12C	
B	17HP4			12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲60	450	CO-2758	AFH3-46		BO46		FP378	R1276	
B	▲60	450				BR4045A				
C2	4	450	CO-1056	PRS450/4		BR445		TC70	TVA-1702	
C3	50	350	CO-2344	PRS450/50		BR4035		TC68	TVA-1713	
C4A	▲125	25	CO-2759	PRS25/100		AO30			R1275	
B	■60	200		AFH3-89		BRH251A				
C5	50	350	CO-2344	PRS450/50		BR4035		TC68	TVA-1713	
C6	2.2				TCZ-2.2		NP0K-2R2		5TCCB-V22	
C7	3-9				829-10					
C8	.5-3				829-3			CT565A		
C9	120			SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C10	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C11	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C12	.5-3				829-3			CT565A		
C13	20			SI20NP0	TCZ-20		NP0K-200	ZT-542	5TCC-Q2	
C14	10			SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C15	.5-3				829-3			CT565A		
C16	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C17	10			SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C18	120			SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C19A	1500		CC2D-152X	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C20A	1500		CC2D-152X	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C21A	1500		CC2D-152X	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C22	5000		CCD-502X	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C23A	1500		CC2D-152D	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C24	68				TCN-68					Note 1
C25	22	500	RCM20A220M	1468-000025	D6-220	5W5Q25	GP1K-220	MC220	1FM-425	
C26	.1	400	CO-H-4104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C27	5000		CCD-502X	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C28	.1	400	CO-H-4104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C29	220	500	RCM20A221M	1468-00025	D6-221	5W5T25	GP2K-221	MC240	1FM-325	
C30	47			SI47	D6-470	5R5Q5	GP1K-470	UC-5447	5GA-Q47	
C31	.1	400	CO-H-4104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C32	4	1500	CO-1915							
C33	47			SI47N750	TCN-47		N750K-470	NT-5447	5TCU-Q47	
C34	47	500	RCM20A470M	1468-00005	D6-470	5W5Q5	GP1K-470	MC225	1FM-45	
C35	5000		CCD-502X	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C36	5000		CCD-502X	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C37	330	500	RCM20A331M	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C38	.002	600	CO-H-6202	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C39	.01	600	CO-H-6103	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C40	.01	600	CO-H-6103	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C41	.047	400	CO-H-4503	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C42	.01	600	CO-H-6103	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C43	330	500	RCM20A331M	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	Note 2
C44	.0047	600	CO-H-5602	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C45	10	500	RCM20A100M	1468-00001	D6-100	5W5Q1	GP1K-100	MC215	1FM-41	
C46	.047	600	CO-H-4503	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C47A	.002			P688-002		PTE6D2		PT622		
B	.005		♦PC-2435	P688-005	♦PC-100	PTE6D5	♦1405-01	PT625	♦101C1	
C	.005			P688-005		PTE6D5		PT625		
C48	.0047	600	CO-O-6472K	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C49	.047	600	CO-H-4503	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C50	.22	400	CO-H-4254	P488-22		PTE4P22		PT4025	4TM-P22	
C51	.02	400	CO-H-4203	P488-02	DF-203	PTE4S2		PT412	4TM-S2	

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	OLYMPIC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C52	.02	400	CO-H-4203	P488-02	DF-203	PTE4S2		PT412	4TM-S2	
C53	100	500	RCM20A101M	I468-0001	D6-101	5W5T1	GP1K-101	MC235	1FM-31	
C54	.005	600	CO-H-5602	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C55	330	500	RCM20A331M	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C56	.047	400	CO-H-4503	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C57	.02	400	CO-H-4203	P488-02	DF-203	PTE4S2		PT412	4TM-S2	
C58	.22	400	CO-H-4254	P488-22		PTE4P22		PT4025	4TM-P22	
C59	330	500	RCM20A331M	I469-00035						
C60	.01	600	CO-B-6103	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C61	1000		CO-O-6102K	SI1000	D6-102	TMSD1	GP2L-102	UC-521	5HK-D1	
C62	.002	600	CO-H-6202	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C63	.05	400	CO-H-4503	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C64	.22	400	CO-H-4254	P488-22		PTE4P22		PT4025	4TM-P22	
C65	.1	400	CO-H-4104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C66	.047	400	CO-H-4503	P488-047		PTE4S47		PT4147	4TM-S47	
C67	.01	600	CO-B-6103	689ZGXY-01		PJ6S1		PT611	6TM-S1	
C68	.01	600	CO-B-6103	689ZGXY-01		PJ6S1		PT611	6TM-S1	

Note 1. Some Models use 56MMF in this application.
Note 2. Chassis with serial numbers below 700650 use 100MMF in this application.
• Items C47A, C47B, C47C, R61A, R61B, R61C are combined in one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	OLYMPIC PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	150Ω		PT-2774	QJ-404*	RTV-196	SBB-653-S	UF152L	Contrast-Panel
B	1 Meg						UR16A	Volume-Rear
C	Switch						US-26	Attach to R1B
R2A	50K Ω		PT-2268	QU-123	AG-44-S	AB-31	U-35	Horiz. Hold
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A
R3A	5000Ω		PT-2271	QU-114	AG-19-S	AB-10	U-14	Vert. Linearity
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R3A
R4A	1 Meg		PT-2269	QU-137	AG-61-S	AB-69	U-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R4A
R5A	2.5Meg		PT-2272	QU-239	AG-84-S	AB-83	U-255	Height
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R5A
R6A	500KΩ		PT-2270	QU-133	AG-58-S	AB-59	U-50	Brightness
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R6A

* CONCENTRIKIT EQUIVALENT - KIT K-2, BASE ELEMENTS & SHAFTS B17-109 & P1-109 (Panel) B13-137 & R1-128 (Rear) & SWITCH 76-1.

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	OLYMPIC PART No.	IRC PART No.	NOTES
R7	22KΩ			BTS-22K	
R8	47KΩ			BTS-47K	
R9	220KΩ			BTS-220K	
R10	180KΩ-5%				
R11	1000Ω			BTS-1000	
R12	4700Ω			BTS-4700	
R13	220KΩ			BTS-220K	
R14	10Ω				
R15	15KΩ			BTS-15K	
R16	10KΩ			BTS-10K	
R17	10KΩ			BTS-10K	
R18	8200Ω	2		BTB-8200	
R19	1000Ω		REB-102M	BTS-1000	
R20	10KΩ		REB-103K		
R21	47Ω		REB-470M		
R22	330Ω		REB-331M	BTS-330	
R23	1000Ω		REB-102M	BTS-1000	
R24	10KΩ		REB-103K		
R25	47Ω		REB-470M		
R26	330Ω		REB-331M	BTS-330	
R27	8200Ω		REB-822K		
R28	150Ω		REB-151M	BTS-150	
R29	330Ω		REB-331M	BTS-330	
R30	10KΩ		REB-103K	BTS-10K	
R31	1 Meg		REB-105M	BTS-1 Meg	
R32	5600Ω		REB-562K	BTS-5600	
R33	6800Ω	2	RED-682K	BTB-6800	
R34	1 Meg		REB-105M	BTS-1 Meg	
R35	1500Ω		REB-152M	BTS-1500	
R36	10KΩ		REB-103M	BTS-10K	
R37	5600Ω	2	RED-562K	BTB-5600	
R38	220KΩ	2	REB-224M	BTS-220K	
R39	33KΩ		REB-333M	BTS-33K	
R40	100KΩ		REB-104M	BTS-100K	
R41	47KΩ		REB-473M	BTS-47K	
R42	1000Ω		REB-102M	BTS-1000	
R43	22KΩ		REB-223M	BTS-22K	
R44	120KΩ		REB-124K	BTS-120K	
R45	120KΩ		REB-124K	BTS-120K	
R46	10 Meg		REB-106M	BTS-10 Meg	

ITEM No.	RATING OHMS	RATING WATT	OLYMPIC PART No.	IRC PART No.	NOTES
R47	470KΩ	½	REB-474M	BTS-470K	
R48	220KΩ	½	REB-224K	BTS-220K	
R49	82KΩ	½	REB-823M	BTS-82K	
R50	180KΩ	½	REB-184K	BTS-180K	
R51	390Ω	2	RED-391M	BTB-390	
R52	470KΩ	½	REB-474M	BTS-470K	
R53	2.2Meg	½	REB-225K	BTS-2.2Meg	
R54	1 Meg	½	REB-105M	BTS-1 Meg	
R55	220KΩ	½	REB-224M	BTS-220K	
R56	1 Meg	½	REB-105M	BTS-1 Meg	
R57	22KΩ	1	REC-223M	BTA-22K	
R58	220KΩ	½	REB-224K	BTS-220K	
R59	10KΩ	½	REB-103M	BTS-10K	
R60	5600Ω	½	REB-562K	BTS-5600	Note
R61A	22KΩ	½		BTS-22K	
B	8200Ω	½	•PC-2435	BTS-8200	
C	8200Ω	½		BTS-8200	
R62	1.5Meg	½	REB-155K	BTS-1.5Meg	
R63	470KΩ	½	REB-474M	BTS-470K	
R64	220KΩ	½	REB-224M	BTS-220K	
R65	10KΩ	½	REB-103K	BTS-10K	
R66	560Ω	½	REB-561K	BTS-560	
R67	1.5Meg	½	REB-155K	BTS-1.5Meg	
R68	1000Ω	1	REC-102M	BTA-1000	
R69	100KΩ	½	REB-104M	BTS-100K	
R70	100KΩ-5%	1	REC-104J	BTB-100K-5%	
R71	560KΩ	½	REB-564K	BTS-560K	
R72	150KΩ	½	REB-154K	BTS-150K	
R73	150KΩ	½	REB-154K	BTS-150K	
R74	8200Ω	½	REB-822K	BTS-8200	
R75	3.3Meg	1	REC-335K	BTA-3.3Meg	
R76	100K-5%	1	REC-104J	BTA-100K-5%	
R77	8200Ω	½	REB-822K	BTS-8200	
R78	33KΩ	1	REC-333M	BTA-33K	
R79	180KΩ	½	REB-184K	BTS-180K	
R80	5600Ω	½	REB-562K	BTS-5600	
R81	470KΩ	½	REB-474M	BTS-470K	
R82	47Ω	½	REB-470M		
R83	100Ω	1	REC-101M	BTA-100	
R84	22KΩ	2	REB-223K	BTB-22K	
R85	100KΩ	1	REC-104M	BTA-100K	

• Items R61A, R61B, R61C, C47A, C47B, C47C are combined in one unit.
Note. Chassis with serial numbers below 700, 650 R60 is omitted.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	OLYMPIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ 1.56A	600VCT .200A	5VAC @ 3A	6.3VAC @8A SEC. 4 6.3VAC @1.2A	TR-2770			TP-319 ①	R-39BC ①

① Drill new mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	OLYMPIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	180Ω	970Ω	TR-1473	A-8125	A-3000 ①	TBO-1 ②	A-97X	Vert. Osc. Trans.
T3	902Ω tap ⑤ 22Ω	@18Ω, @23.5Ω SEC. 2 0Ω	TR-2771		HVO-9 ⑧	TFB-13	D-19 ③	Horiz. Output Trans.
T4	1600Ω	5.5Ω	TR-2765	A-8141 ①⑤	A-3039 ⑤			Vert. Output Trans.
T5A	17Ω		CL-2753	DY-9 ④	MDF-70 ④	TY-3 ④	Y-17 ④	Horiz. Deflection Coils
B	49Ω							Vert. Deflection Coils

① Drill one new mounting hole.
② Mount on top of chassis.
③ Wire as in original circuit (no connection to terminal "T").
④ Use original deflection coil network.
⑤ Connect blue lead to plate - red lead to yellow lead of yoke - connect green leads of yoke and transformer together and connect to original B+ point.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	OLYMPIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T6	2.2KΩ	3.5Ω	226Ω	.54Ω	TR-2766	A-3876	A-2928	RO-2	S-2X	

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	OLYMPIC PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1A	5"	PM	3.5Ω	SK-1788-1 ②	ST-105	5A1	① 10" PM speaker used in Models 17C44, 17K41, 17K42, 17K50, 20C45, 20C52, 20C53, 20K43 and 20K51
B	10"	PM	3.5Ω	SK-1789-1 ①	Mod. P5-X 10J11 *	10A31	② 5" PM Models 17T46, 17T47 and 17T48

* Viking Part No.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	OLYMPIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.200ADC	64 Ω	2 Hy.	CK-1346	C-2325 ①	C-2991 ①	TR-4200 ①	C-17X ①

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	OLYMPIC PART No.	MERIT PART No.	NOTES
L2	Ant. Coils	0Ω	0Ω			
L3	Fil. Choke	0Ω				
L4	Neutralizing Coil	0Ω				
L5	RF, Mixer & Osc. Coils	0Ω				
L6	Fil. Choke	0Ω				
L7	1st. Video IF	.9Ω			TV-102 *	
L8	2nd. Video IF	.4Ω	.4Ω	CL-2309		
L9	3rd. Video IF	.4Ω	.4Ω	CL-2309		
L10	4th. Video IF	.3Ω		CL-2754		Includes Trap
L11	Series Peaking Coil	3.6Ω			TV-180	36 Microhenries
L12	Shunt Peaking Coil	17Ω		CL-2614	TV-188	500 Microhenries
L13	RF Choke	6.5Ω		CL-1535	TV-184	180 Microhenries
L14	Series Peaking Coil	6.5Ω		CL-1535	TV-184 †	180 Microhenries, wound on 39KΩ resistor
L15	4.5MC Trap	1.6Ω		CL-2331	TV-151	
L15	Shunt Peaking Coil	10Ω		CL-2073	TV-185	250 Microhenries
L17	Sound IF	1.6Ω		CL-2331	TV-151	
L18	Discriminator	1.7Ω	1.7Ω	TR-2781-1	TV-114	
L19	Horiz. Osc.	40Ω		CL-2767		Tapped @ 11Ω
L20	Horiz. Phase	22Ω		CL-2760	MWC-1 *	
L21	Width Coil	22Ω		CL-2752	MWC-1 *	

* Enlarge mounting hole.
† Parallel with 39KΩ resistor

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M1	RF Tuner	CL-2755-1	
M2	Centering Magnet	PP-2763	
M3	Ion Trap	PP-2623	
B3	Trimmer	CT-2757	Horiz. Drive (50-370MMF)
	Knob	KN-2295-1	Channel Selector (Mahogany)
	Knob	KN-2296	Fine Tuning (Mahogany)
	Knob	KN-2297-1	Off/On Volume (Mahogany)
	Knob	KN-2298	Contrast (Mahogany)
	Safety Glass	PP-2791	TK
	Safety Glass	PP-2798	TL
	Mask	PP-2799	Plastic (TK)
	Mask	PP-2800	Plastic (TL)
	Back Cover	ST-2711	(Radio Section) Models 20K43, 20K51
	Back Cover	ST-2818	(Radio Section) Models 17K41, 17K42, 17K50
	Back Cover	ST-2801	Models 17T40, 17T48
	Back Cover	ST-2802	Model 17C44
	Back Cover	ST-2803	Models 17K41, 17K42
	Back Cover	ST-2804	Models 20T46, 20T47
	Back Cover	ST-2805	Models 20C45, 20C53
	Back Cover	ST-2806	Model 20K43
	Back Cover	ST-2883	Model 20D49
	Cabinet	CA-2786	Model 17T40
	Cabinet	CA-2786-3	Model 17T48
	Cabinet	CA-2788	Model 17C44
	Cabinet	CA-2790	Model 17K42
	Cabinet	CA-2790-1	Model 17K41
	Cabinet	CA-2792	Model 20T46
	Cabinet	CA-2792-1	Model 20T47
	Cabinet	CA-2794	Models 20C45 & 20C53
	Cabinet	CA-2796	Model 20K43
	Cabinet	CA-2876	Model 20D49
	Cabinet	CA-2878	Model 17K50
	Cabinet	CA-2892	Model 20C52

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST
DENVER, COLORADO

PHONO CARTRIDGE

ITEM No.	OLYMPIC PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	SHURE PART No. CARTRIDGE	SHURE PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	REMARKS
M4		ACD-J	A-1 A-3	W22A	A65MG A6IA	96-T	0-1 or S-1 & 0-3 or S-3	

ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	OLYMPIC PART No.	WALCO PART No.	JENSEN PART No.	REMARKS
M5		W-5MGA or W-5MGS and W-5A or W-5S	A-75LP or A-85LP and A-75 or A-85	

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V20	Converter	12SA7	12SA7	8R	
V21	IF Amplifier	12SK7	12SK7	8N	
V22	Det.-AVC-AF Amp	12SQ7	12SQ7	8Q	
V23	Audio Output	50L6GT	50L6GT	7S	
V24	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C69A	■60	150	CO-2820	AFH3-13		CO12		FP214.5		
B	▲80	150								
C70	10	25	CO-1133	PRS25/10		BR102A		TC22	TVA-1204	
C71	.01	600	CO-H-6103	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C72	.025	600								Note 3
C73A	150		†PC2478	SI150	†PC-51	TM5T15	†1403-02	UC-5315	5GA-T15	
B	150			SI150		TM5T15		UC-5315	5GA-T15	
C74	47	500	RCM20A470M	1468-00005	D6-470	5W5Q5	GP1K-470	MC225	1FM-45	
C75A	220									
B	.002									
C	.005		‡ PC2477		‡PC-150		‡1408-01		‡103C4	
D	250									
E										
C76	.005	600	CO-H-6502	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C77	.01	600	CO-H-6103	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C78	.047	400	CO-B-4503	489ZX-05		PJ4S47		PT4147	4TM-S47	
C79	.1	400	CO-H-4104	P488-1		PTE4P1		PT401	4TM-P1	Note 4
C80	47	500		1468-00005	D6-470	5W5Q5	GP1K-470	MC225	1FM-45	Note 5

Note 3. Some models use .02 MFD in this application (Part No. CO-H-6203).
Note 4. When replacing this item, wind 12 turns #20 insulated wire to duplicate replaced unit.
† Items C73A, C73B, R90 are combined in one unit.
‡ Items C75A, C75B, C75C, C75D, C75E, R92A, R92B, R92C are combined in one unit.
Note 5. Not used in all Models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R86A	2 Meg	½	PT-567	Q13-139	AG-66-Z	AB-76	U-55	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R86A
R87A	3 Meg	½	PT-2160		AG-67-Z	AB-85	U-57	Tone
B	Shaft		Not Req.		KSS-3	AK-4	Not Req.	Attach to R87A
C	Switch		Not Req.		SWB-1	KB-3	US-28	Attach to R87A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: OLYMPIC PART No.	IRC PART No.	NOTES
R88	22KΩ	½	REB-223M	BTS-22K	
R89	2.2Meg	½	REB-225M	BTS-2.2Meg	
R90	47KΩ	½	†PC-2478	BTS-47K	
R91	470KΩ	½	REB-474M	BTS-470K	
R92A	6.8Meg	½		BTS-6.8Meg	
B	470KΩ	½	‡PC-2477	BTS-470K	
C	470KΩ	½		BTS-470K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: OLYMPIC PART No.	IRC PART No.	NOTES
R93	150Ω	½	REB-151K	BTS-150	
R94	1000Ω	2	RED-102M	BTB-1000	
R95	1 Meg	½	REB-105M	BTS-1 Meg	
R96	330Ω	1	REC-331M	BTA-330	
R97	220KΩ	½	REB-224M	BTS-220K	

† Items R90, C73A, C73B are combined in one unit.
‡ Items R92A, R92B, R92C, C75A, C75B, C75C, C75D, C75E are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: OLYMPIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T7	2.4KΩ	3.3Ω	206Ω tap @ 8Ω	.66Ω	TR-2690-1	A-3330 ①	A-3031 ①	RO-3 ①		

① Drill one new mounting hole.

COILS (RF-IF)

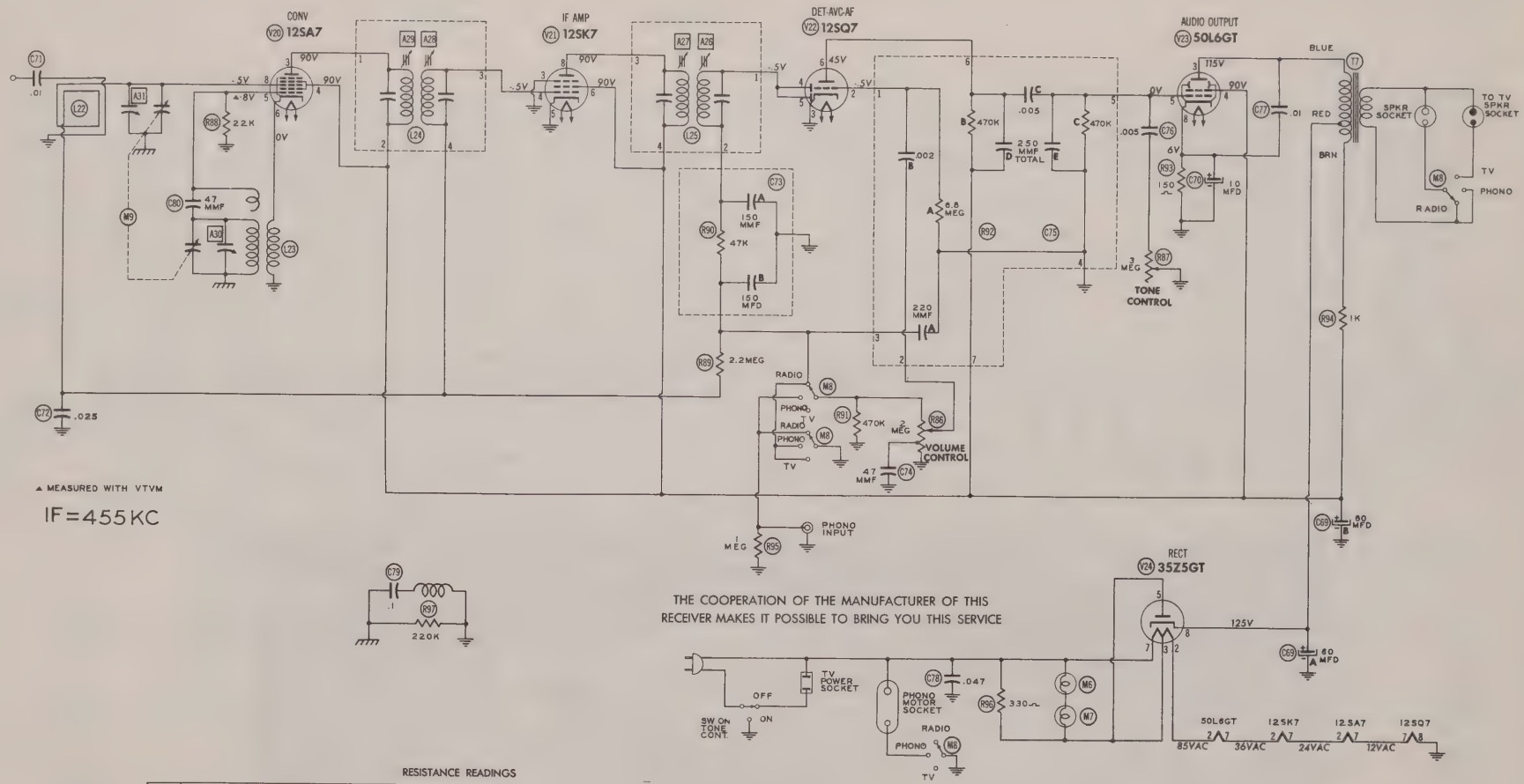
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: MERIT PART No.	NOTES
L22	Loop Ant.	.1Ω	1.4Ω	LP2687		
L23	Osc. Coil	.5Ω	6.5Ω	CL869		
L24	Input IF	14.5Ω	14.5Ω	TR1644	BC-352	
L25	Output IF	14.5Ω	14.5Ω	TR1644	BC-353	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: OLYMPIC PART No.		NOTES
M6	Bayonet	3.2	.16	White	BU2688		Type #1490
M7	Bayonet	3.2	.16	White	BU2688		Type #1490

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M8	Switch	SW-2689	Function (AM-Phono-TV)
M9	Tuning Capacitor	CV-2681	29-450MMF, 33-195MMF
	Knob	KN-422	Volume (Walnut)
	Knob	KN-423	Off/On Tone (Walnut)
	Knob	KN-425	Tuning (Walnut)
	Knob	KN-2684	AM-Phono-TV
	Back Plate	MS-965	Dial
	Pointer	PO-1011	Dial



▲ MEASURED WITH VTVM

IF=455KC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V20	12SA7	220KΩ	24Ω	†1KΩ	†1KΩ	22KΩ	.5Ω	12Ω	2.5Meg
V21	12SK7	220KΩ	36Ω	0Ω	2.5Meg	0Ω	†1KΩ	24Ω	†1KΩ
V22	12SQ7	220KΩ	6.8Meg	0Ω	390KΩ	390KΩ	†470KΩ	12Ω	0Ω
V23	50L6GT	INF	86Ω	†206Ω	†1KΩ	470KΩ	INF	36Ω	150Ω
V24	35Z5GT	INF	121Ω	115Ω	115Ω	115Ω	0Ω	86Ω	70KΩ

ALL MEASUREMENTS TAKEN IN AM (RADIO) POSITION ONLY
† MEASURED FROM PIN 8 OF V24
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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OLYMPIC MODELS 17C44, 17K41, 42, 50, 17T40, 48 (Ch. TK17), 20C45, 52, 53, 20D49, 20K43, 51, 20T46, 47 (Ch. TL20)

RADIO SCHEMATIC

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the Channel Selector and Fine Tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft.

PICTURE TUBE SAFETY GLASS CLEANING

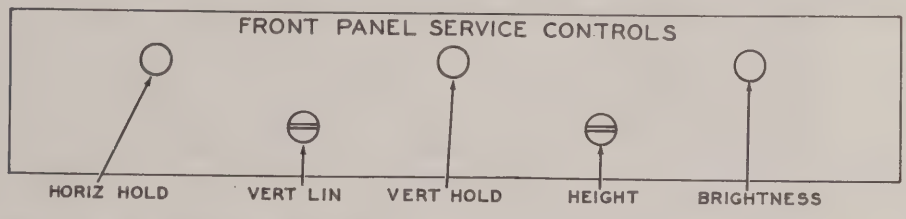
Remove 3 wood screws from wood strip at top of safety glass.

Remove wood strip and safety glass. Use extreme caution when removing glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions.)

SERVICE ADJUSTMENT LOCATION



HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For the adjustment of the Horiz. Oscillator Slug, (L19), it is necessary to remove the rear cover, and supply power to set with a cheater cord. Adjustment is located on top of chassis. (See tube placement chart).

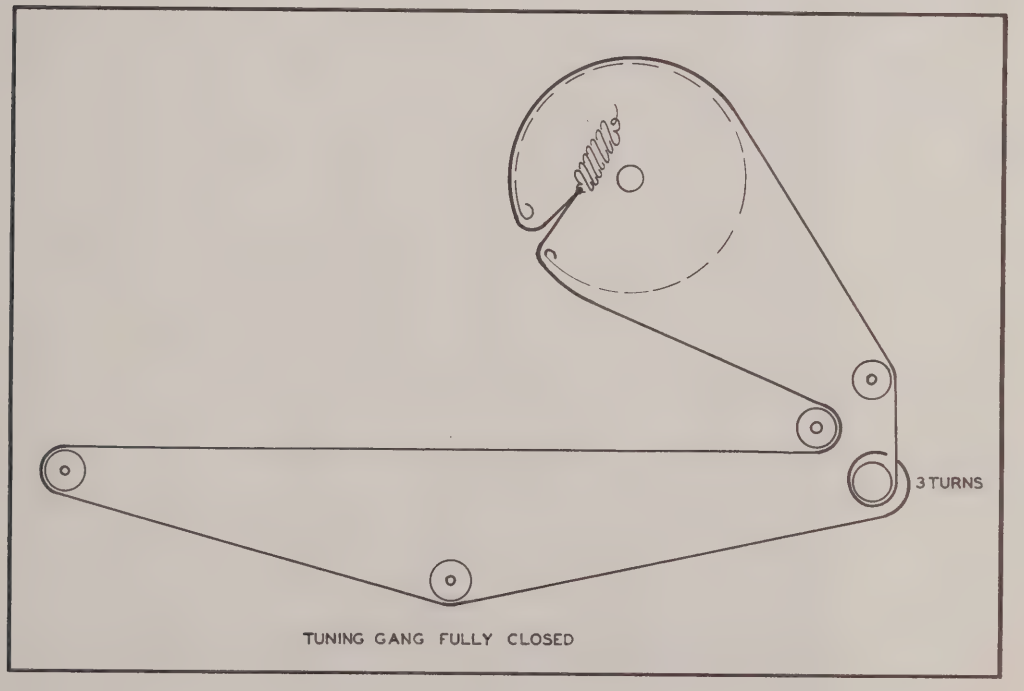
DISCRIMINATOR ADJUSTMENT

To eliminate Sound IF Detector buzz, adjust the Discriminator Secondary (L18) located on top of chassis. (See Tube placement chart.)

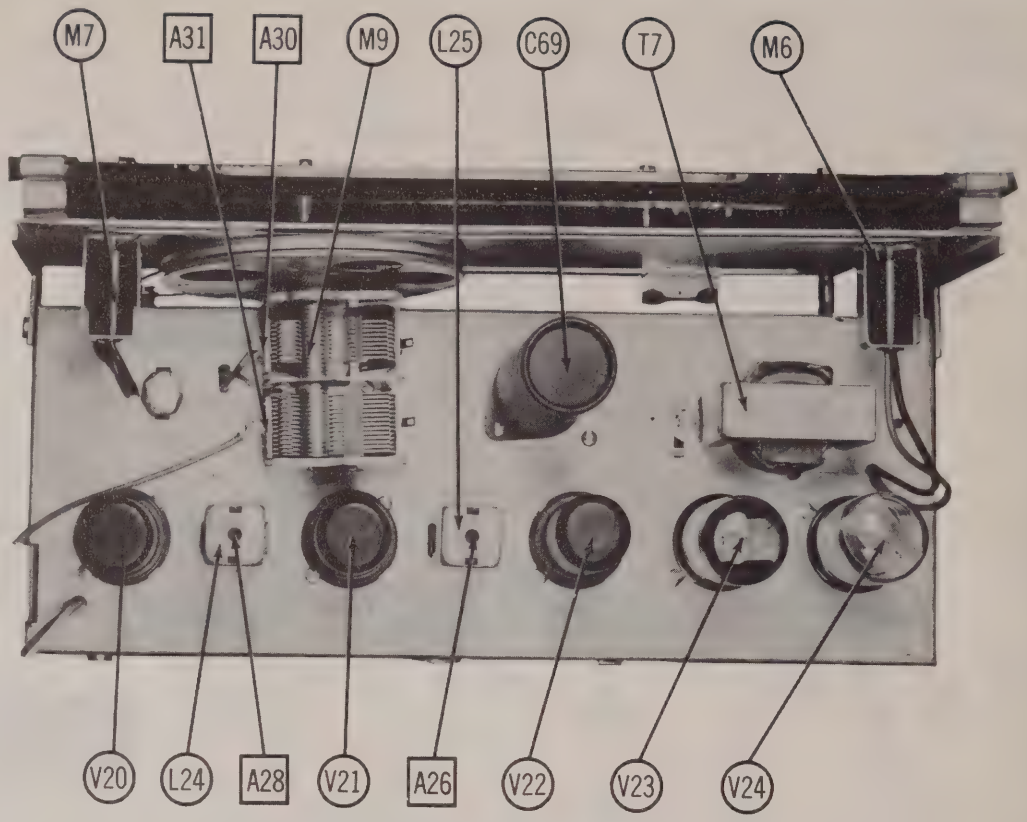
CENTERING

Centering is accomplished mechanically consisting of two magnetic rings around the neck of the picture tube. Rotate the rings until the picture is properly centered.

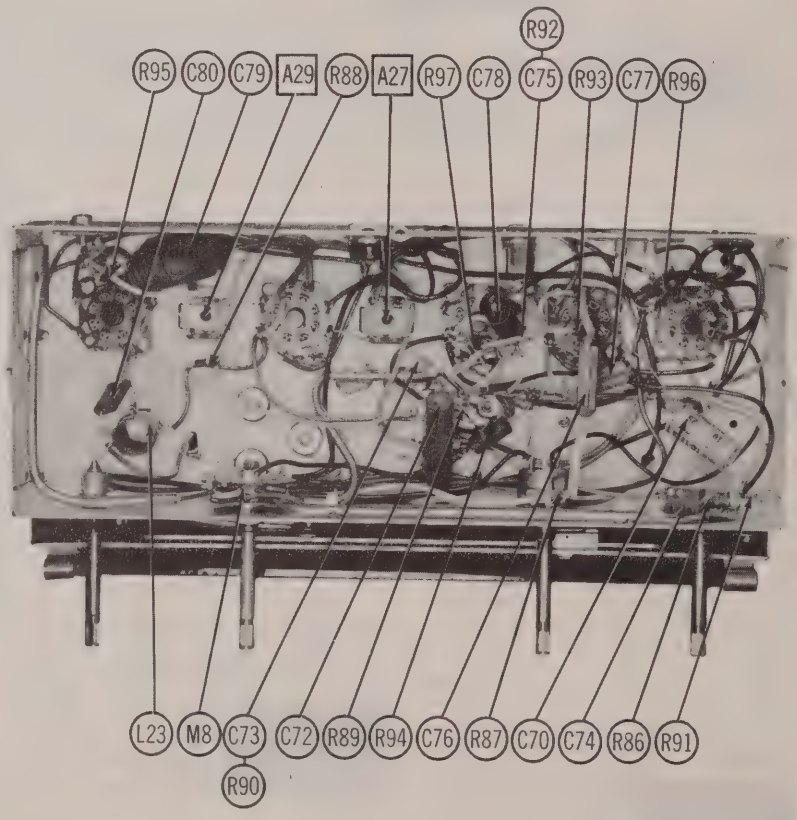
PROPERTY OF
L. F. BLAIR
3924 MEADE ST.
DENVER, COLORADO



RADIO DRIVE CORD STRINGING



RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW

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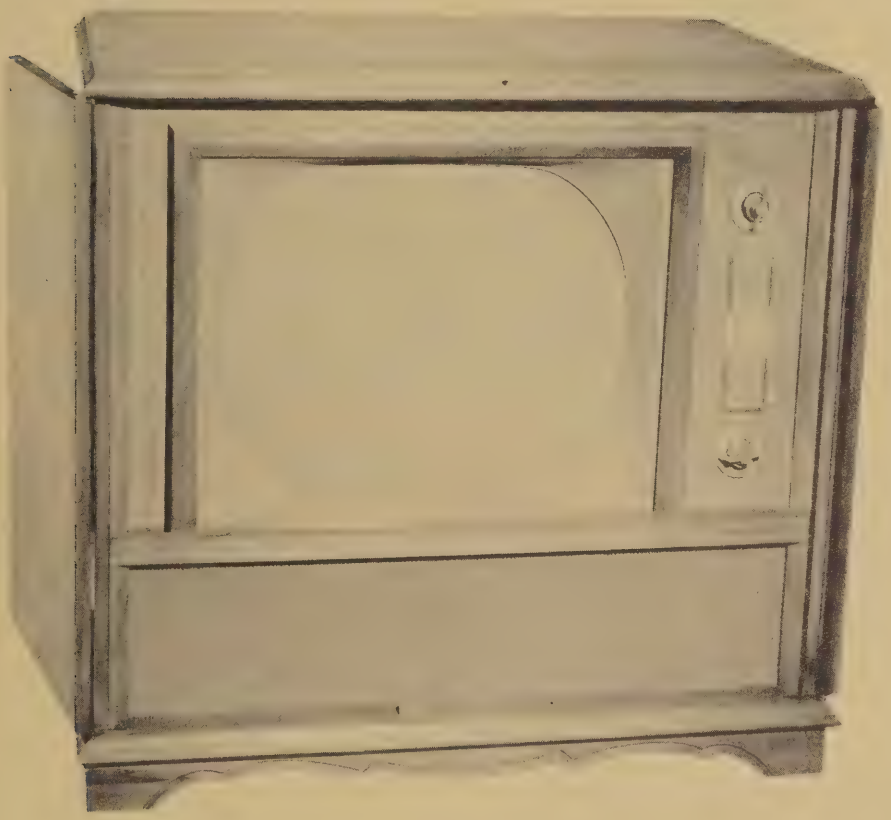
Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



MODEL 2622

PACKARD-BELL
MODELS 2621, 2622 (Ch. 2621-2)

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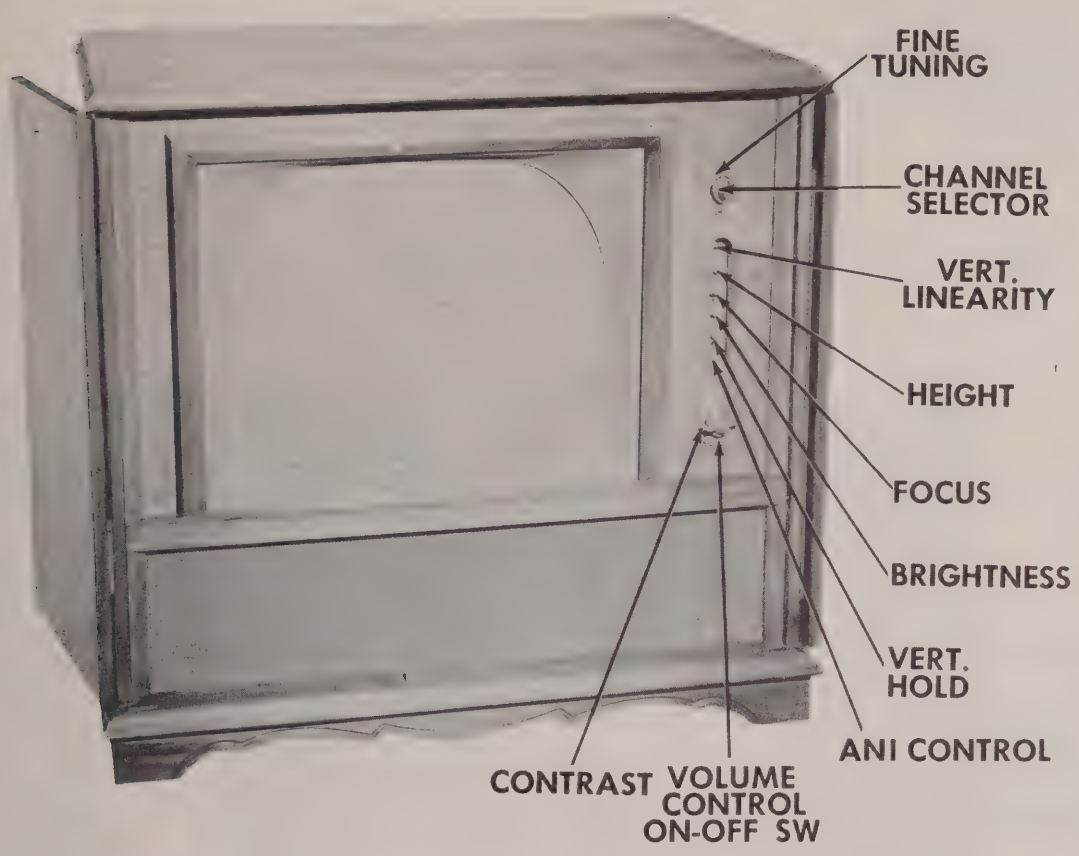
PACKARD-BELL
MODELS 2621, 2622 (Ch. 2621-2)



PACKARD-BELL
MODELS 2621, 2622 (Ch. 2621-2)

PACKARD-BELL 2622

TRADE NAME	Packard-Bell Models 2621, 2622 (Ch. 2621-2)
MANUFACTURER	Packard-Bell Co. -Service Div., 11 th. & Hope Sts., Los Angeles 15, Calif.
TYPE SET	Television Receiver
TUBES	Twenty-Six

POWER SUPPLY 110-120 Volts AC-60 Cycle RATING 1.65 Amp. @ 117 Volts AC
TUNING RANGE–Channels 2 thru 13 , Video IF 25MC, Sound IF 20.5MC (Intercarrier)

INDEX

Alignment Instructions 6
Disassembly Instructions 10
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions 12, 13, 14
Photographs
Cabinet - Rear View 11
Capacitor and Alignment Identification 4,9
Chassis - Top View 3
RF Tuner 7
Photographs
Resistor and Inductor Identification 15, 16
Resistance Measurements 8
Schematic 2
Servicing in the Field 10
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

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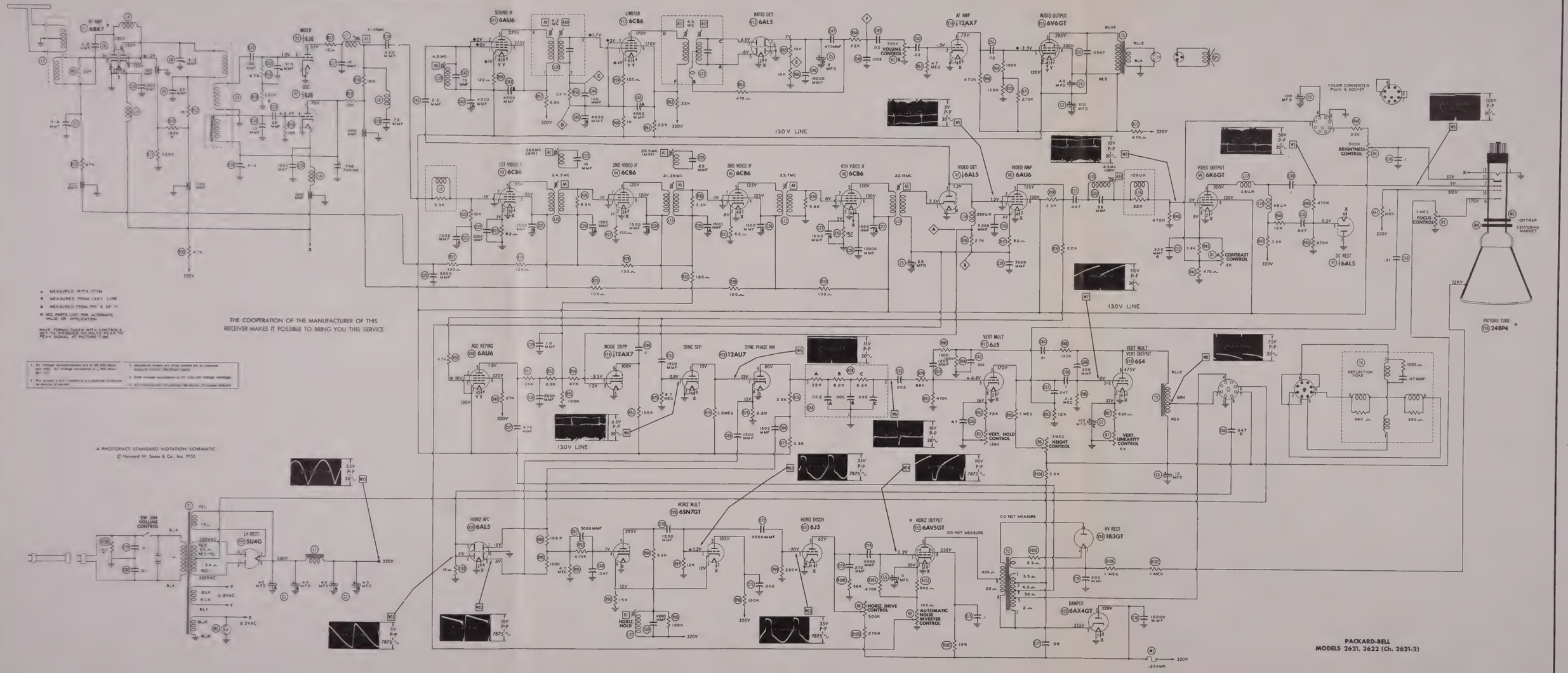
PACKARD-BELL
MODELS 2621, 2622 (Ch. 2621-2)
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
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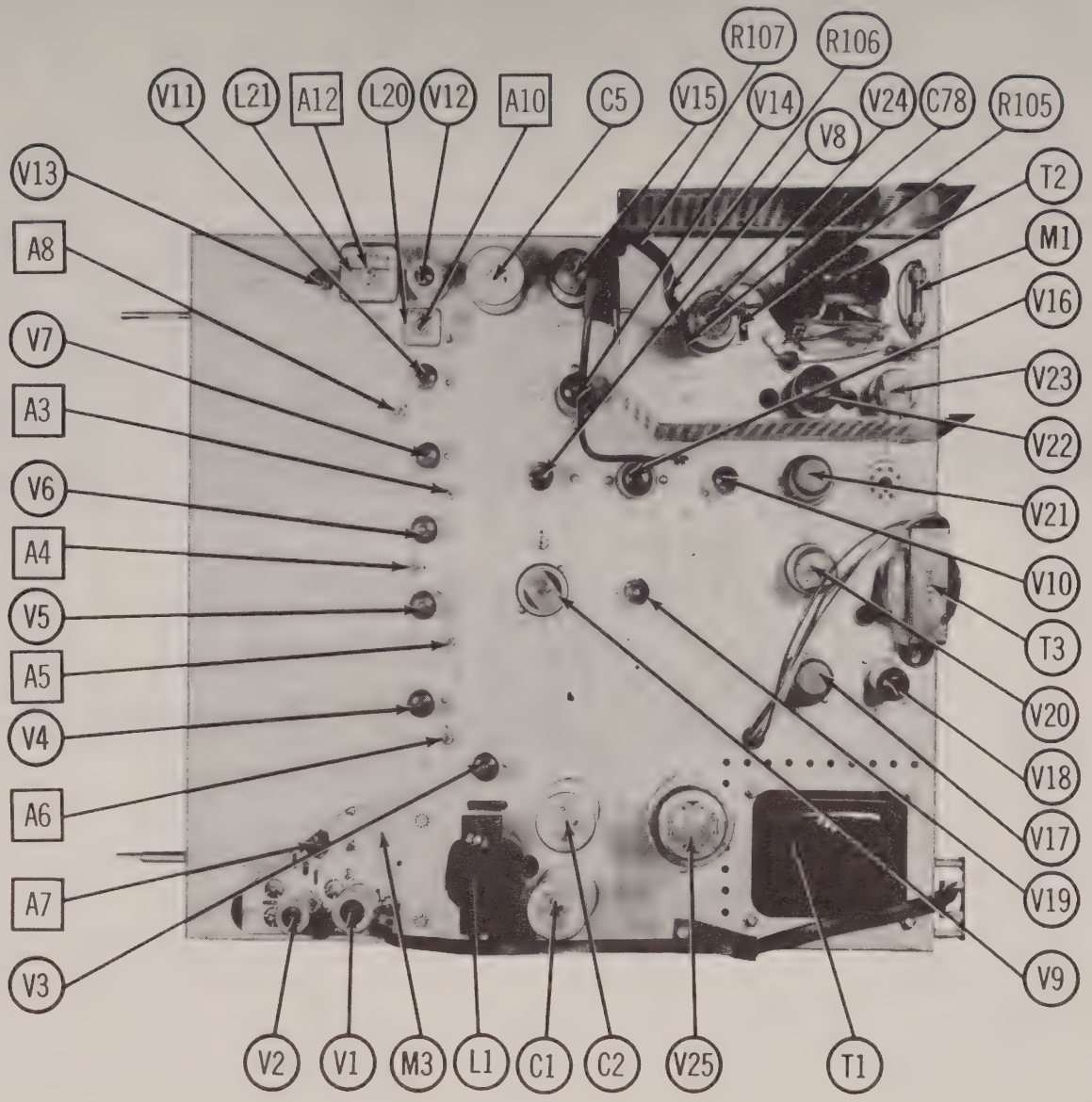
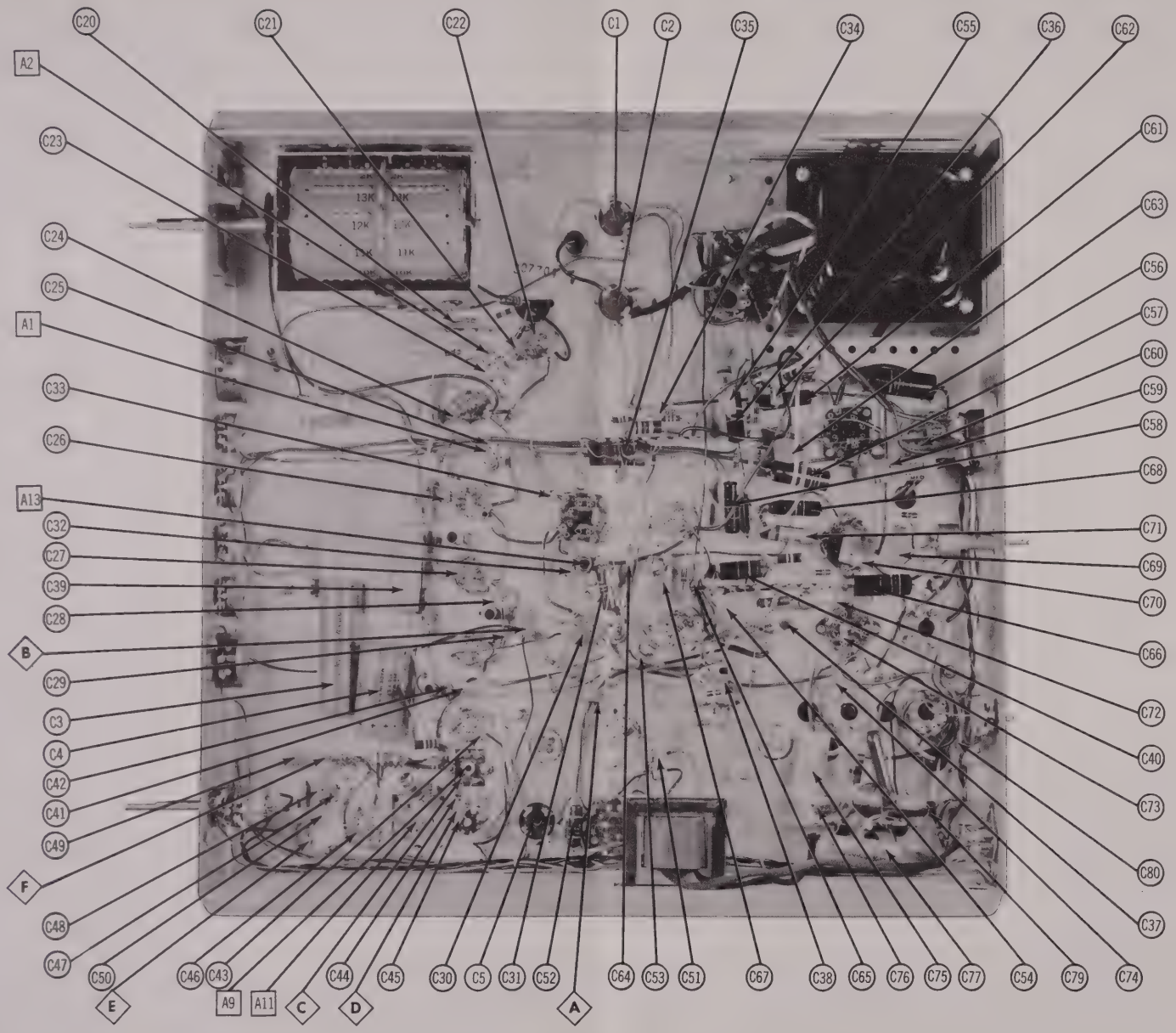
130V LINE
PICTURE TUBE 24BP4
PACKARD-BELL
MODELS 2621, 2622 (Ch. 2621-2)

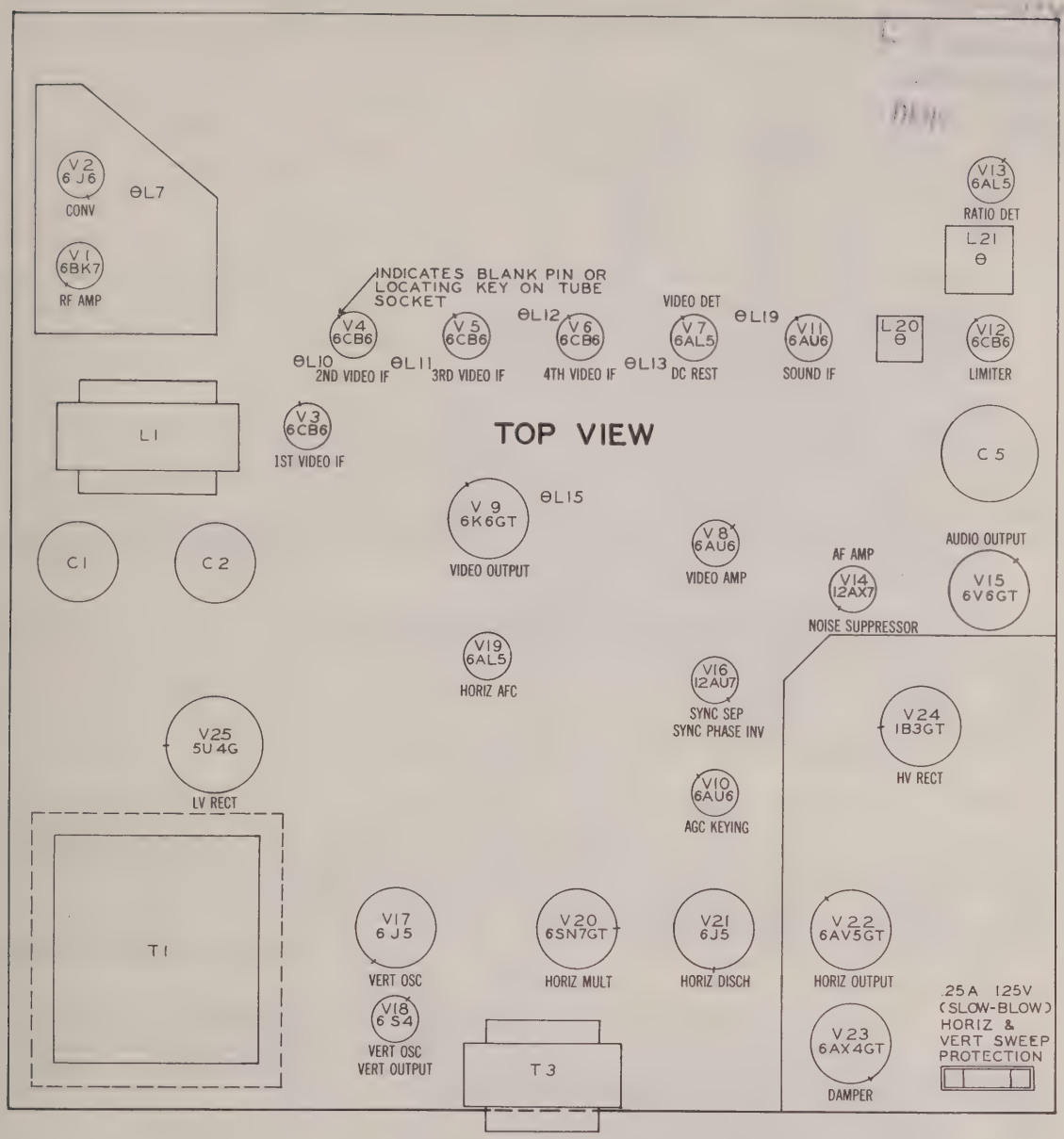


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V25

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6, V7, V15
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V8, V9, V26
Has pic, no sound - V11, V12, V13, V14, V15
Overloaded picture - V10

SYNC FAILURE
No vert. sync - V16, V17
No horiz. sync - V16, V19, V20
No vert. or horiz. sync - V16

SWEEP FAILURE
No raster, has sound - V20, V21, V22, V23, V24, V26, Fuse (M1)
No vertical deflection - V17, V18
Poor vert. linearity or foldover - V17, V18
Poor horiz. linearity or foldover - V20, V21, V22, V23
Narrow picture - V20, V21, V22, V23, V24, V25
Vert. off freq. - V16, V17
Horiz. off vreq. - V16, V19, V20

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal discharge tube, (V21), from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), from its socket and replace it with a 6J6 which has pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded lead of C39, connect the positive lead to chassis. Remove the NOISE SUPP. tube (V14) from its socket.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	20.5MC (UNMOD)	Any	DC probe to point (A). Common to point (B).	A1	Adjust for MINIMUM deflection.
2.	"	"	26.5MC	"	"	A2	"
3.	"	"	22.15MC	"	"	A3	Adjust for maximum deflection.
4.	"	"	23.7MC	"	"	A4	"
5.	"	"	21.25MC	"	"	A5	"
6.	"	"	24.3MC	"	"	A6	"
7.	"	"	21.05MC	"	"	A7	"

OVERALL VIDEO IF RESPONSE CHECK

Remove the 3 volt battery and connect a 5MFD, 50 volt electroylitic capacitor, (positive to chassis), across C39.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	23MC (10MC SWP)	20.5MC 21.55MC 25MC 26.5MC	Any	Vert. amp. thru 22KΩ to point (A). Low side to chassis.		Check for response curve similar to Figure 1. If necessary, retouch A3 thru A7 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

During sound IF alignment the common lead of the VTVM is connected to approximately 130 volts with respect to chassis. Avoid touching or grounding the VTVM case.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (UNMOD)	Any	DC probe to point (C). Common to point (D).	A8, A9, A10	Adjust for maximum deflection.
10.	"	"	"	"	DC probe to point (E). Common to chassis.	A11	"
11.	"	"	"	"	DC probe to point (F). Common to point (E).	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to point (C). Low side to chassis.	A8, A9, A10	Adjust for maximum amplitude and symmetry as per Figure 2.
10.	"	"	"	"	"	Vert. amp. to point (F). Low side to chassis.	A12, A11	Adjust A12 so 4.5MC occurs at center of crossover lines as per Figure 3. Adjust A11 for maximum amplitude and straightness of crossover lines. Continue with Step 12.

4.5MC TRAP ALIGNMENT

Remove the video detector-D.C. restorer tube, (V7), from its socket.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
12.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (UNMOD)	Any channel not used locally.	DC probe thru detector probe, (Figure 4), to pin 2 of picture tube.	A13	Adjust for minimum deflection. If generator output is insufficient tune in a strong station and adjust A13 for minimum 4.5MC beat interference.

THE TUNER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

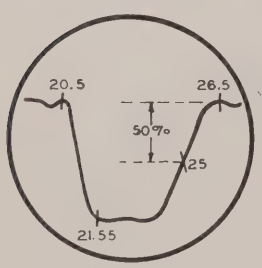


FIG. 1

FIG. 2

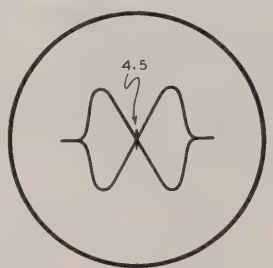


FIG. 3

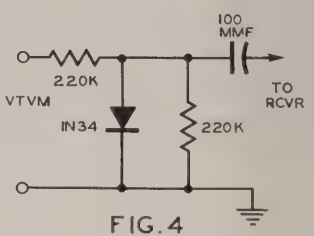
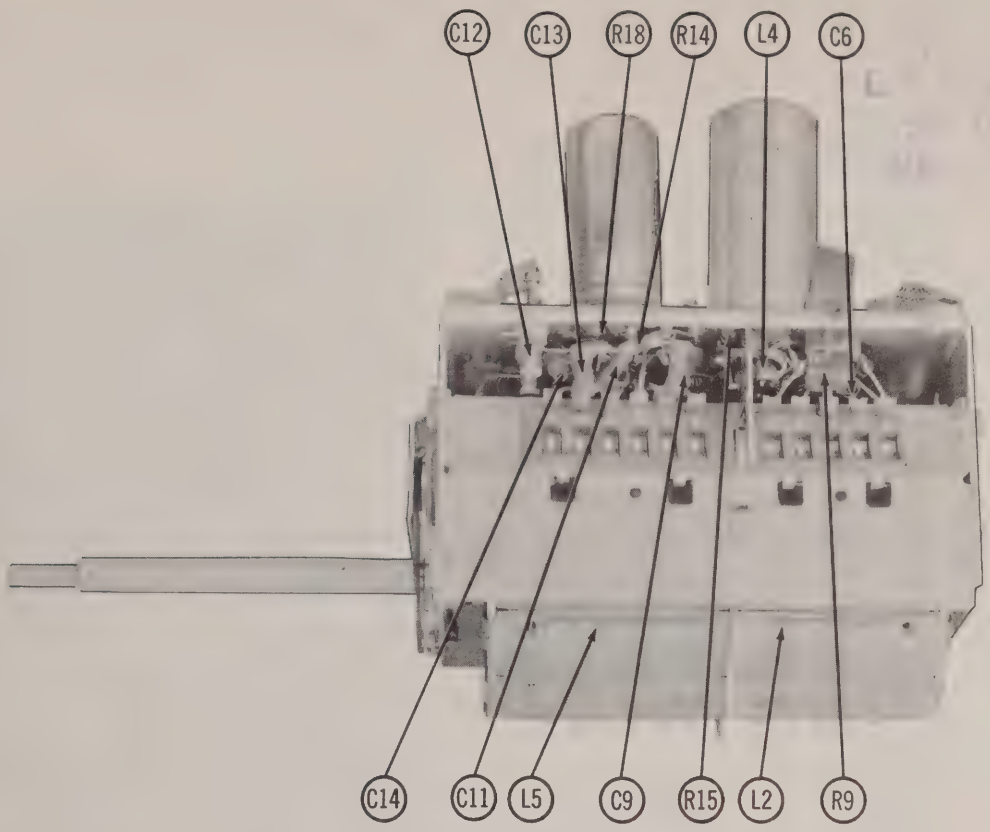
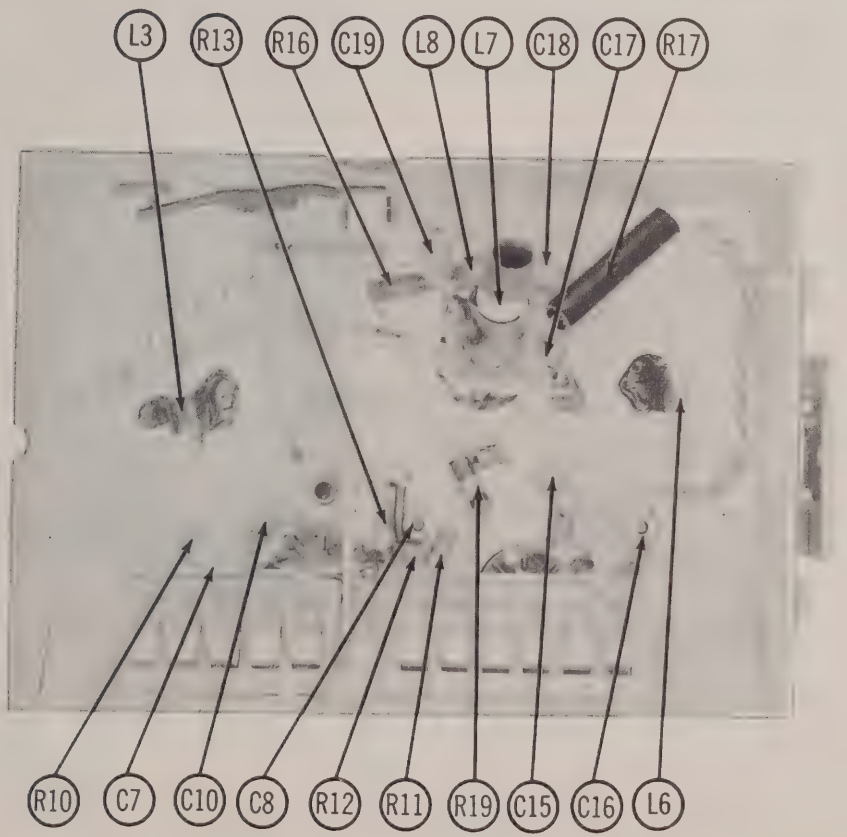


FIG. 4



RF TUNER-RIGHT SIDE

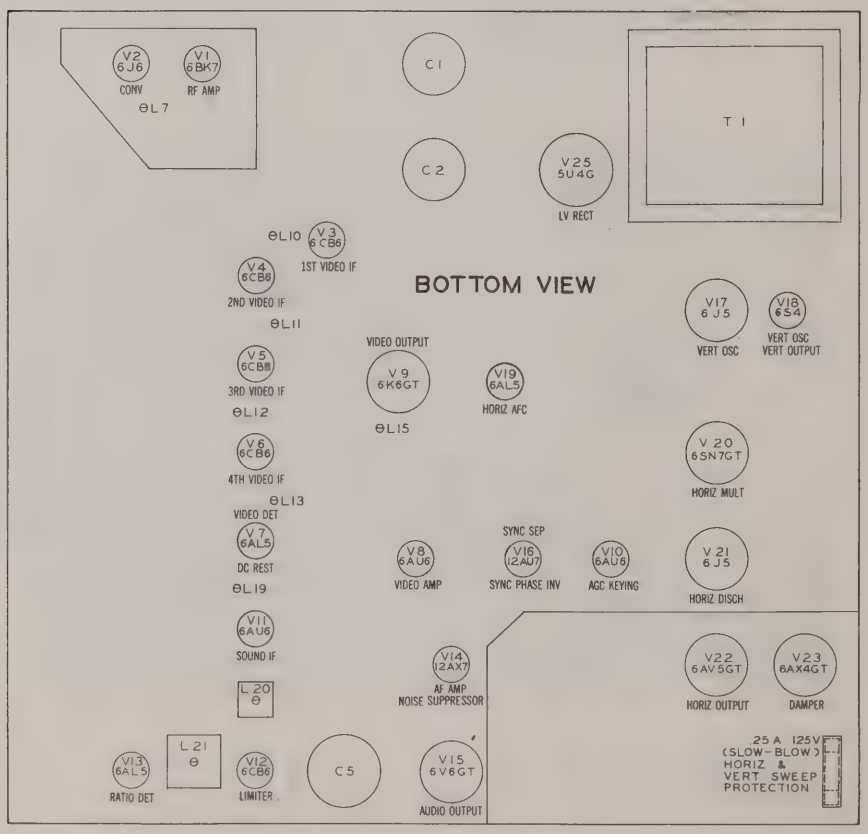


RF TUNER-BOTTOM VIEW

RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	157KΩ	0Ω	.1Ω	0Ω	† 5.7KΩ	† 100KΩ	INF	0Ω
V 2	6J6	#10.3KΩ	#15.3KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6CB6	110KΩ	82Ω	0Ω	.1Ω	#300Ω	#300Ω	0Ω		
V 4	6CB6	110KΩ	150Ω	0Ω	.1Ω	#200Ω	#200Ω	0Ω		
V 5	6CB6	110KΩ	82Ω	.1Ω	0Ω	#100Ω	#100Ω	0Ω		
V 6	6CB6	.3Ω	180Ω	.1Ω	0Ω	#.5Ω	#0Ω	0Ω		
V 7	6AL5	45Ω	0Ω	0Ω	.1Ω	470KΩ	0Ω	2.7KΩ		
V 8	6AU6	2.7KΩ	0Ω	.1Ω	0Ω	#3.3KΩ	#0Ω	127Ω		
V 9	6K6GT	0Ω	0Ω	† 3.3KΩ	#0Ω	470KΩ	INF	.1Ω	1KΩ	
V 10	6AU6	#72KΩ	#0Ω	#0Ω	#.1Ω	203KΩ	† 27KΩ	#0Ω		
V 11	6AU6	#1.2Ω	#0Ω	#0Ω	#.1Ω	† 6.8KΩ	† 6.8KΩ	#120Ω		
V 12	6CB6	#23KΩ	#1.12KΩ	#0Ω	#.1Ω	† 33KΩ	† 33KΩ	#1KΩ		
V 13	6AL5	20KΩ	0Ω	0Ω	.1Ω	INF	0Ω	INF		
V 14	12AX7	† 470KΩ	4.7Meg	0Ω	0Ω	0Ω	#100KΩ	147KΩ	2.7KΩ	.1Ω
V 15	6V6GT	0Ω	#.1Ω	† 1KΩ	† 513Ω	† 230KΩ	† 130KΩ	#0Ω	160KΩ	
V 16	12AU7	#1.5Meg	4.7Meg	0Ω	0Ω	0Ω	#6.6KΩ	#1.5Meg	2.2KΩ	.1Ω
V 17	6J5	0Ω	0Ω	■1.9Meg	■900KΩ	470KΩ	■157KΩ	.1Ω	95KΩ	
V 18	6S4	INF	3.6KΩ	2.2Meg	0Ω	.1Ω	2.2Meg	INF	INF	■7.3KΩ
V 19	6AL5	10Ω	10Ω	0Ω	.1Ω	4.8Meg	0Ω	4.8Meg		
V 20	6SN7GT	12KΩ	† 100KΩ	1.5KΩ	5.2Meg	† 5.7KΩ	1.5KΩ	.1Ω	0Ω	
V 21	6J5	0Ω	.1Ω	† 725KΩ	■32Ω	220KΩ	56KΩ	0Ω	0Ω	
V 22	6AV5GT	470KΩ	0Ω	600Ω	INF	■20Ω	INF	.1Ω	† 10KΩ	
V 23	6AX4GT	INF	INF	2.8Meg	INF	† 43Ω	100Ω	0Ω	.1Ω	
V 24	1B3GT	PINS 1 TO 8 HAVE INF RESISTANCE								TOP CAP ■420Ω
V 25	5U4G	INF	130KΩ	INF	25Ω	INF	23.8Ω	INF	130KΩ	
V 26	24BP4	0Ω	940KΩ	PIN 6 950KΩ	PIN 10 † 1Meg	PIN 11 120KΩ	PIN 12 .1Ω			

† MEASURED FROM PIN 8 OF V25.
# MEASURED FROM 130 VOLT LINE.
■ MEASURED FROM PIN 3 OF V23.



TUBE PLACEMENT CHART

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the Channel Selector and Fine Tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft.

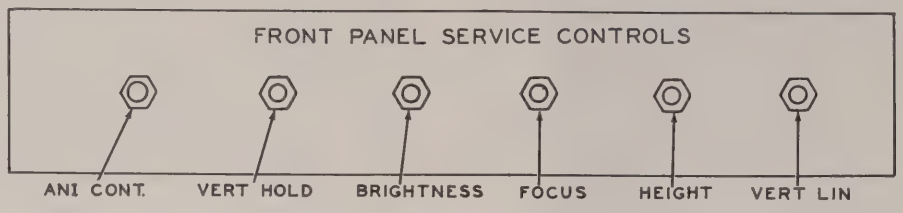
PICTURE TUBE SAFETY GLASS CLEANING

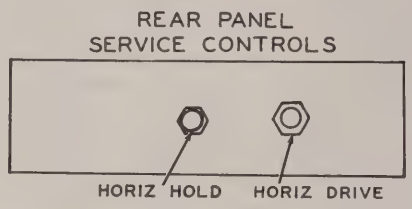
For picture tube safety glass cleaning, it is necessary to remove chassis. (See disassembly instructions).

PICTURE TUBE REMOVAL

Can be removed without chassis removal by removing 2 tension springs and 4 bolts from base of CRT mounting assembly. Remove CRT mounting assembly.

SERVICE ADJUSTMENT LOCATION





SPECIAL ADJUSTMENTS

AUTOMATIC NOISE INVERTER: Tune in weakest available station. Turn ANI control clockwise, from fully counterclockwise, until sync distortion appears in picture, then counterclockwise just enough to remove the distortion.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For the adjustment of the Horiz. Oscillator Slug, it is necessary to remove the rear cover, and supply power to set with a cheater cord. Adjustment is located on top of chassis. (See tube placement chart).

SOUND DETECTOR BUZZ ADJUSTMENT

To eliminate Sound IF Detector buzz, adjust the Ratio Detector Secondary (L21) located on top of chassis. (See tube placement chart).

FUSES

One fuse is used for Horiz. Sweep Circuits protection. For location see tube placement chart.

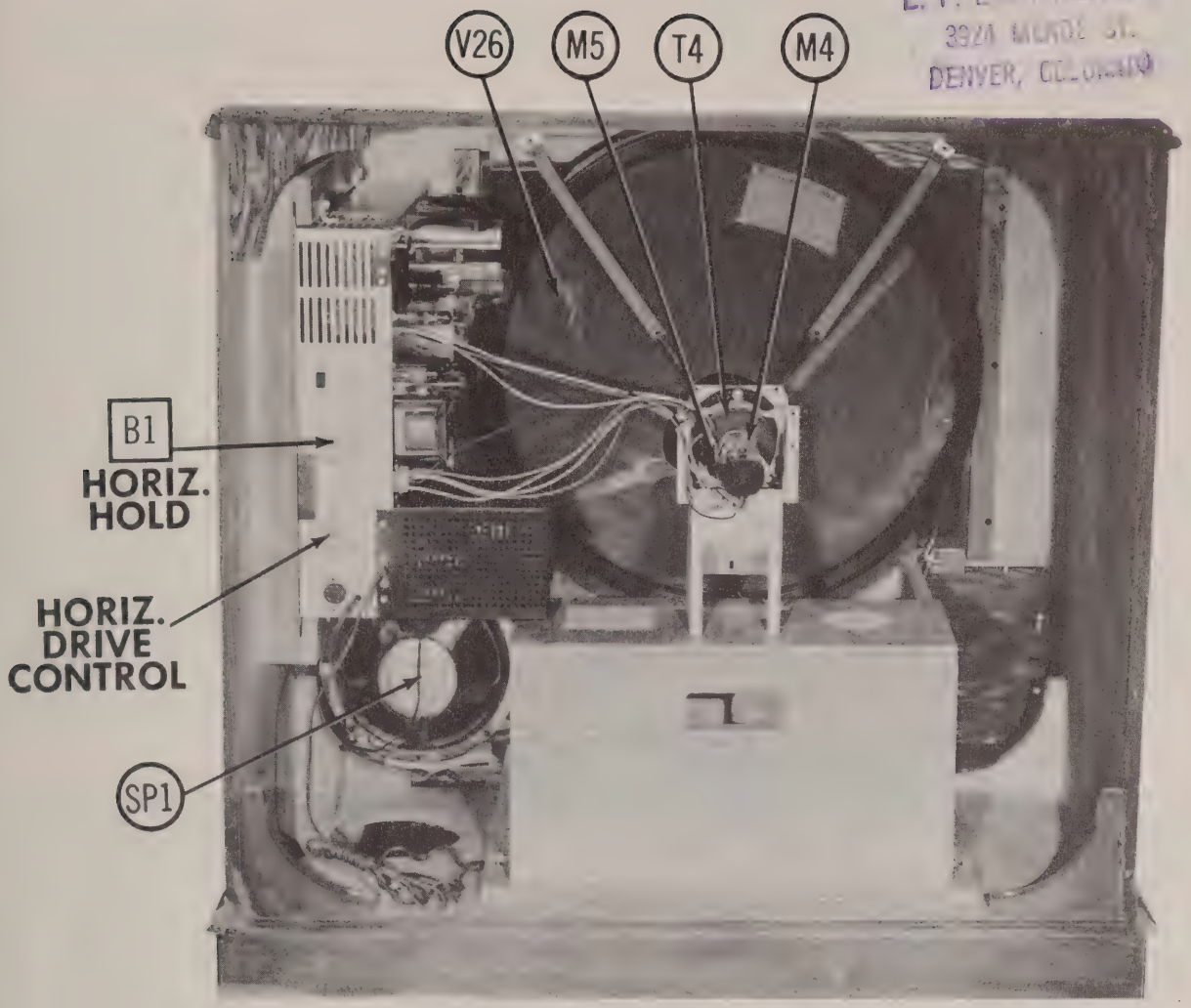
CENTERING

Centering is accomplished mechanically by adjustment of centering magnet positioned flush against the deflection yoke. Rotate magnet around the neck of the picture tube until picture is properly centered.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push-on type control knobs from front panel.
2. Remove 16 wood screws. Remove rear cover.
3. Disconnect yoke plug, CRT socket, HV snap-on lead and speaker.
4. Remove 4 chassis bolts. Remove chassis.
5. Remove 4 wood screws. Remove speaker.

PROPERTY OF
L. F. BLANKENSHIP
3920 MORSE ST.
DENVER, COLORADO



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold adjustment (B1) until the picture synchronizes horizontally.

Switch to another channel and back again, if the picture does not immediately pull into sync, readjust B1 and repeat the check.

Turn the horizontal drive control clockwise as far as possible without crowding, or a white line, appearing near the center of the picture.

AUTOMATIC NOISE INVERTER ADJUSTMENT

Turn the ANI control fully counterclockwise, then clockwise until the picture begins to pull sideways (sync distortion). Then turn the control counterclockwise just enough to eliminate the pulling.

Check all available stations for proper operation. If necessary retouch the ANI control for best operation on all channels.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Packard-Bell PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BK7	6BK7	9AJ	
V1B	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J8	6J8	7BF	
V3	1st Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd Video IF Amp.	6CB6	6CB6	7CM	
V6	4th Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Detector - DC Restorer	6AL5	6AL5	6BT	
V8	Video Amplifier	6AU6	6AU6	7BK	
V9	Video Output	6K6GT	6K6GT	7S	
V10	AGC Keying	6AU6	6AU6	7BK	
V11	Sound IF Amp.	6AU6	6AU6	7BK	
V12	Limiter	6CB6	6CB6	7CM	
V13	Ratio Detector	6AL5	6AL5	6BT	
V14	AF Amplifier - Noise Suppressor	12AX7	12AX7	9A	
V15	Audio Output	6V6GT	6V6GT	7S	
V16	Sync Separator - Sync Phase Inv.	12AU7	12AU7	9A	
V17	Vert. Mult.	6J5	6J5	6Q	
V18	Vert. Mult. -Vert. Output	6S4	6S4	9AC	
V19	Horiz. AFC	6AL5	6AL5	6BT	
V20	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V21	Horiz. Discharge	6J5	6J5	6Q	
V22A	Horiz. Output	6AV5GT	6AV5GT	6CK	
V22B	Horiz. Output	6AU5GT	6AU5GT	6CK	
V23	Damper	6AX4GT	6AX4GT	4CG	
V24	HV Rectifier	1B3GT	1B3GT	3C	
V25	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Packard-Bell PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V26A	24BP4		12C	
B	21EP4A		12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Packard-Bell PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	40	450	24055	AFH3-159		C118		FP375	TVL-3764	
B	40	450								
C	100	200								
C2A	40	450	24055	AFH3-159		C118		FP375	TVL-3764	
B	40	450								
C	100	300								
C3	15	600	24058	PRS600/10		BRHV610		TC28	TVA-1955	
C4	40	350	20463	PR5450/40		BR4035		TC78	TVA-1611	
C5A	22	75	24069	AFH4-101				FP424.1		
B	22	25								
C	330	15								
D	25	25								
C6	2.2			TCZ-2.2			NP0K-2R2		5TCCB-V22	
C7	3.6			829-10						
C8	5.3			829-5				CT565A		
C9	120		SI100	DE-101	TM5T12	GP2K-121		UC-5312	5GA-T12	
C10	1000		SI1000	D6-102	TM5D1	GP2L-102		UC-521	5HK-D1	
C11	100		SI100	D6-101	TM5T1	GP1K-101		UC-531	5GA-T1	
C12	3.3			829-3				CT565A		
C13	20		SI20NP0	TC-20		NP0K-200		ZT-542	5TCC-Q2	
C14	10		SI10N750	TCN-10		N750K-100		NT-541	5TCU-Q1	
C15	1000		SI1000	D6-102	TM5D1	GP2L-102		UC-521	5HK-D1	
C16	5.3			829-5				CT565A		
C17	10		SI10N750	TCN-10		N750K-100		NT-541	5TCU-Q1	
C18	33									
C19	300		SI300	D6-301		GP2K-301		UC-533	5GA-T3	
C20	5000		23931	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C20A	2500		23936	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C22	5000		23931	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C23	10			SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C24A	1500		23936	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C25	22			SI22NP0	TCZ-22		NP0K-220	ZT-5422	5TCC-Q22	Note 1
C26A	1500		23936	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C27A	1500		23936	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C28	10000		23939	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C29	5000		23931	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C30	5000		23931	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C31	.047	200	23927	PZ88-047	DF-503	PTE6S47		PT4I47	2TM-S47	
C32	56				TCZ-56		NP0-333-560			
C33	330		23944	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	Note 2
C34	.1	600	23012	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C35	.047	600	23010	P688-047	DF-503	PTE6S47		PT6I47	6TM-S47	
C36	.1	200	23012	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C37	470	1000	23987							
C38	5000		23931	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C39	1.0	100	23940	484-1.0				PT61	2TM-M1	
C40	.1	200	23012	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C41	2.2		23952		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C42	75			SI75	D6-750		GP1K-750	UC-5475	5GA-Q75	
C43A	4000		23955	BPD-2X004	D6-402	TM5DD4	822-004	DCD-534	5HK-2D4	
B	4000				D6-402					

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Packard-Bell PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C44	100		23914	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C45A	4000		23955	BPD-2X004	D6-402	TM5DD4	822-004	DCD-534	5HK-2D4	
B	4000				D6-402					
C46	10000		23939	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C47	470		23916	SI470	D6-471		GP2K-471	UC-5347	5GA-T47	
C48	.003	600	23016	P688-003	D6-302	PTE6D3	GP2-333-302	PT623	6TM-D3	
C49	.02	600	23007	P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C50	.02	600	23007	P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C51	.02	600	23007	P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C52	.0047	600	23004	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C53	1500		23936	SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C54A	.002			P688-002		PTE6D2		PT622		
B	.005		#23951	P688-005	#PC-100	PTE6D5	#1405-01	PT625	#101C1	
C	.005			P688-005		PTE6D5		PT625		
C55	.002	600	23002	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C56	.47	200	23035	P288-47		PTE4P5		PT405	2TM-P47	
C57	.047	600	23017	P688-047	DF-503	PTE6S47		PT6I47	6TM-S47	
C58	.01	600	23006	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C59	.1	600	23012	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C60	200	3500	23958							
C61	.01	600	23006	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C62	.001	600	23001	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C63	1200	500	23219							
C64	1500		23936	SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C65	1500		23936	SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C66	.047	600	23010	P688-047	DF-503	PTE6S47		PT6I47	6TM-S47	Note 3
C67	5000		23931	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C68	.047	200	23010	P288-047	DD-502	PTE4S47		PT4I47	2TM-S47	
C69	4000	500	23208	1464-004		IDR5D4			MS-24	
C70	1200	500	23219							
C71	.002	600	23002	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C72	5000		23931	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C73	270		23943	SI270	D6-271		GP2K-271	UC-5327	5GA-T27	
C74	5000		23931	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C75	.1	600	23012	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C76	10000		23939	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C77	.05	600	23010	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C78	500	20000	23959	HV20C	TV3-502	MM-C20T5	413-501		20DK-T5	
C79	.01	125VAC	23932							
C80	.01	125VAC	23932							

Note 1. Part of L11 (Part #29546).
Note 2. Not used in late Models.
Note 3. Model 2621 uses .1MFD in this application (Part #23012).
* Items C54A, C54B, C54C, R78A, R78B, R78C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Packard-Bell PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	5000Ω	1/2	25835A	QJ-36*	RTV-212	SBB-627-S	UF53R	Contrast - Panel
B	500KΩ	"					UR55A †	Volume - Rear
C	Switch						US-26	Attach to R1B.
R2A	100Ω	2	25842	W-100	A43-100	VK-121	RI00L	Automatic Noise Inverter- Wire Wound.
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R2A.
R3A	150KΩ	1/2	25839C	Q1I-125	AG-52-S	AB-46	U-43	Vert. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R3A.
R4A	500KΩ	1/2	25832	Q1I-133	AG-58-S	AB-59	SU-50	Brightness
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A.
R5A	3Meg	1/2	25805D	Q1I-140	AG-84-S	AB-84	SU-59	Focus
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A.
R6A	3Meg	1/2	25805D	Q1I-140	AG-84-S	AB-84	SU-59	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R6A.
R7A	5000Ω	4	25807C	4WS-5000	A10-5000	SVP-589	M5MP	Vert. Linearity - Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R7A.
R8A	500KΩ	1/2	25832	Q1I-133	AG-58-S	AB-59	SU-50	Horiz. Drive
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R8A.

* CONCENTRIKIT EQUIVALENT - KIT K-2, BASE ELEMENTS & SHAFTS, B17-1I4 & P1-1I2 (Panel)
B13-133 & R2-204 (Rear) & SWITCH 70-1.
† Universal replacement - (Mallory exact duplicate - Part No. UE525S).

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Packard-Bell PART No.	IRC PART No.	NOTES
R9	22KΩ	1			
R10	47KΩ	1			
R11	220KΩ	1/2		BTS-220K	
R12	1000Ω	1/2		BTS-1000	
R13	180KΩ	1/2		BTS-180K	Note 1.
R14	4700Ω	1/2		BTS-4700	
R15	220KΩ	1/2		BTS-220K	Note 2.
R16	15KΩ	1/2		BTS-15K	
R17	10Ω	1/2			
R18	10KΩ	1/2		BTS-10K	
R19	10KΩ	1/2		BTS-10K	
R20	4700Ω	2	73433	BTP-4700	
R21	120Ω	1/2	73014	BTS-120	
R22	10KΩ	1/2	73037		
R23	82Ω	1/2	73012	BTS-82	
R24	120Ω	1/2	73014	BTS-120	
R25	100Ω	1/2	73013	BTS-100	
R26	8200Ω	1/2	73036		
R27	150Ω	1/2	73015	BTS-150	
R28	120Ω	1/2	73014	BTS-120	
R29	100Ω	1/2	73013	BTS-100	
R30	3300Ω	1/2	73031	BTS-3300	
R31	82Ω	1/2	73012	BTS-82	
R32	120Ω	1/2	73014	BTS-120	
R33	100Ω	1/2	73013	BTS-100	
R34	5600Ω	1/2	73034		
R35	180Ω	1/2	73016	BTS-180	
R36	2700Ω	1/2	73030	BTS-2700	
R37	82Ω	1/2	73012	BTS-82	
R38	3300Ω	1/2	73031	BTS-3300	
R39	22KΩ	1/2	73041	BTS-22K	
R40	470KΩ	1/2	73157	BTS-470K	
R41	5600Ω	1/2	73034	BTS-5600	
R42	470Ω	1/2	73021	BTS-470	
R43	3300Ω	2	73431	BTP-3300	
R44	10KΩ	1/2	73037	BTS-10K	
R45	470KΩ	1/2	73157	BTS-470K	
R46	470KΩ	1/2	73157	BTS-470K	
R47	1Meg	1/2	73161	BTS-1Meg	
R48	33KΩ	1/2	73043	BTS-33K	
R49	27KΩ	1/2	73042	BTS-27K	
R50	47KΩ	1/2	73045	BTS-47K	
R51	100KΩ	1/2	73149	BTS-100K	
R52	3300Ω	1/2	73031	BTS-3300	
R53	100KΩ	1/2	73149	BTS-100K	
R54	47KΩ	1/2	73045	BTS-47K	
R55	100KΩ	1/2	73149	BTS-100K	
R56	120Ω	1/2	73014	BTS-120	
R57	6800Ω	1/2	73235	BTA-6800	
R58	22KΩ	1/2	73041		
R59	120Ω	1/2	73014	BTS-120	
R60	1000Ω	1/2	73025	BTS-1000	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Packard-Bell PART No.	IRC PART No.	NOTES
R61	22KΩ	1/2	73041	BTS-22K	
R62	33KΩ	2	73443	BTB-33K	
R63	470Ω	1/2	73021	BTS-470	
R64	22KΩ	1/2	73041	BTS-22K	
R65	10KΩ	1/2	73037	BTS-10K	
R66	10KΩ	1/2	73037	BTS-10K	
R67	4.7Meg	1/2	73169	BTS-4.7Meg	
R68	470KΩ	1/2	73157	BTS-470K	
R69	100KΩ	1/2	73149	BTS-100K	
R70	150KΩ	1/2	73151	BTS-150K	
R71	270KΩ	1/2	73054	BTS-270K	
R72	470Ω	2	73421	BTB-470	
R73	4.7Meg	1/2	73169	BTS-4.7Meg	
R74	1.5Meg	1/2	73163	BTS-1.5Meg	
R75	2200Ω	1/2	73029	BTS-2200	
R76	3300Ω	1/2	73031	BTS-3300	
R77	3300Ω	1/2	73031	BTS-3300	
R78A	22KΩ	1/2		BTS-22K	
B	8200Ω	2	#23951	BTS-8200	
C	8200Ω	1/2		BTS-8200	
R79	68KΩ	1/2	73047	BTS-68K	
R80	150KΩ	1/2	73151	BTS-150K	
R81	470KΩ	1/2	73157	BTS-470K	
R82	22KΩ	1/2	73041	BTS-22K	
R83	12KΩ	1/2	73038	BTS-12K	
R84	100KΩ	1/2	73149	BTS-100K	

* Items R78A, R78B, R78C, C54A, C54B and C54C are combined in one unit.
Note 1: Some Models use a 220KΩ resistor in this application.
Note 2: Some Models use a 4700Ω resistor in this application.

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Packard-Bell PART No.	IRC PART No.	NOTES
R85	1Meg	1/2	73161	BTS-1Meg	
R86	2.2Meg	1/2	73165	BTS-2.2Meg	
R87	820Ω	1	73224	BTA-820	
R88	150KΩ	1/2	73151	BTS-150K	
R89	100KΩ	1/2	73049	BTS-100K	
R90	100KΩ	1/2	73049	BTS-100K	
R91	4.7Meg	1/2	73169	BTS-4.7Meg	
R92	10Ω	1	73201		
R93	470KΩ	1/2	73157	BTS-470K	
R94	5600Ω	1/2	73034	BTS-5600	
R95	100KΩ	1/2	73149	BTS-100K	
R96	1500Ω	1/2	73027	BTS-1500	
R97	12KΩ	1/2	73038	BTS-12K	
R98	100KΩ	1	73249	BTA-100K	
R99	220KΩ	1/2	73153	BTS-220K	
R100	56KΩ	1/2	73046	BTS-56K	
R101	470KΩ	1/2	73157	BTS-470K	
R102	500Ω	10	73616	1-3/4A-500	
R103	10KΩ	2	73437	BTB-10K	
R104	5600Ω	2	73434	BTB-5600	
R105	3.3Ω	1	73291		
R106	1Meg	1	73398		
R107	1Meg	1	73398		
R108	100KΩ	1/2	73149	BTS-100K	
R109	270KΩ	1/2	73054	BTS-270K	

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Packard-Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA PART No.
T1	117VAC @ 1.65A	660VCT .170ADC	5VAC @ 3A	6.3VAC @ 1.3A SEC. 4 6.3VAC @ 9A	89043	P-8165 ①	P-3070	TP-370 ①	R-39BC	

① Do not use extra, high voltage taps.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: Packard-Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA PART No.	NOTES
T2	420Ω tap @ 20Ω	40Ω tap @ 2Ω, 32Ω, 36.5Ω SEC. 2 0Ω	89437		HVO-9 ①	TFB-13 ②	D-19 ③	230T1	Horiz. Output Trans.
T3	1700Ω tap @ 4.7Ω		89434	A-8141	A-3039	TSO-12	A-104X	226T1	Vert. Output Trans.
T4A	35Ω		29542	DY-11A ④	MDF-71	TY-7 ⑤	Y-19 ⑤		Horiz. Deflection Coils
B	45Ω				④				Vert. Deflection Coils

① Wire as in original circuit except no connection to terminal #8.
② Wire as in original circuit except present connection to terminal "T" should be made to new terminal #4.
③ Terminal #4 alternate connection for terminal "T".
④ Use original Horiz. Deflection Coil network.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: Packard-Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T5	7.1KΩ	3.2Ω	540Ω	.25Ω	89426	A-3849 ①	A-3020 ①	RO-13 ①	S-9X ①	

① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: Packard-Bell PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1	10"	PM	3.2Ω	83705	10J11	10A4A	

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: Packard-Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.170ADC	43Ω	1.45 Hy.	27005	C-2325	C-2991	TR-1733 ①	C-17X

① Drill one new mounting hole.

PACKARD-BELL MODELS 2621, 2622 (Ch. 2621-2)

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Packard-Bell PART No.	MERIT PART No.	
L2	Ant. Coils	0ΩCT	0Ω			
L3	Fil. Choke	0Ω				
L4	Neutralizing Coil	0Ω				
L5	RF, Mixer Grid & Osc. Coils	0Ω				
L6	Fil. Choke	0Ω				
L7	1st. Video IF	.4Ω				
L8	RF Choke	.4Ω				
L9	IF Coupling	.8Ω		29523		Wound on 3.3KΩ resistor
L10	2nd. Video IF	.3Ω	.3Ω	29547		Includes Trap
L11	3rd. Video IF	.4Ω	.4Ω	29546		Includes Trap
L12	4th. Video IF	.3Ω	.3Ω	29055		
L13	5th. Video IF	.4Ω	.4Ω	29056		
L14	Shunt Peaking Coil	11.5Ω		29509	TV-185	250 Microhenries
L15	4.5MC Trap	1Ω		29545	TV-151	
L16	Series Peaking Coil	7.5Ω		29606	TV-182	120 Microhenries, Wound on 22KΩ resistor
L17	Series Peaking Coil	3.6Ω		29520	TV-180	36 Microhenries
L18	Shunt Peaking Coil	6.5Ω		29507	TV-181	98 Microhenries
L19	1st. Sound IF	1.2Ω		29053	TV-151	
L20	2nd. Sound IF	3.4Ω	2.1Ω	29541	TV-113 *	
L21	Ratio Det.	4Ω	.4ΩCT	29054	TV-115 *	Tertiary Winding - 1.4Ω
L22	Horiz. Osc.	105Ω		29527	TV-163	

* Use adaptor plate.

FUSES

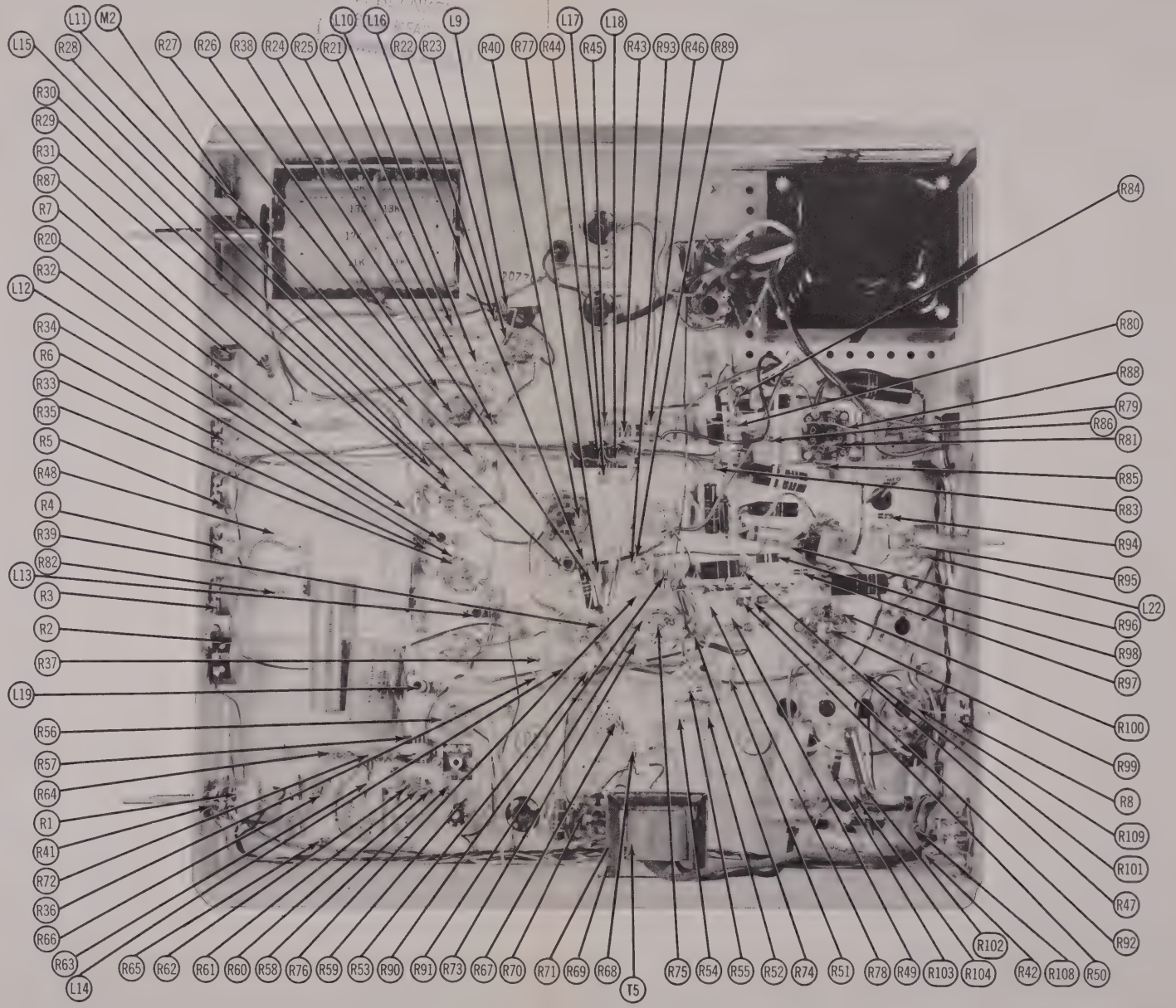
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Packard-Bell PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG Slo/Blo	1/4A 125V	45005		313.250 (3AG-1/4A Slo/Blo)	357001	MDL-1/4	4405

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Packard-Bell PART No.		
M2	Bayonet	6-8	.15	Brown			Type No. 47.

MISCELLANEOUS

ITEM No.	PART NAME	Packard - Bell PART No.	NOTES
M3	RF Tuner	10531	
M4	Centering Magnet		
M5	Ion Trap	28065	
	Cabinet	2621	Model 2621; Specify Finish (Mahogany, Light Oak, Maple or French Provincial).
	Cabinet	2622	Model 2622; Specify Finish (Mahogany, Light Oak, Maple or French Provincial).
	Escutcheon	40144	
	Knob	52067-1	Channel Selector
	Knob	52068	Fine Tuning
	Knob	52069-1	Off/ On/ Volume
	Knob	52070	Contrast



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PHILCO MODELS 53-T1883, 53-T1884, 53-T1886, L, 53-T2183 (Ch. 44 & G4)

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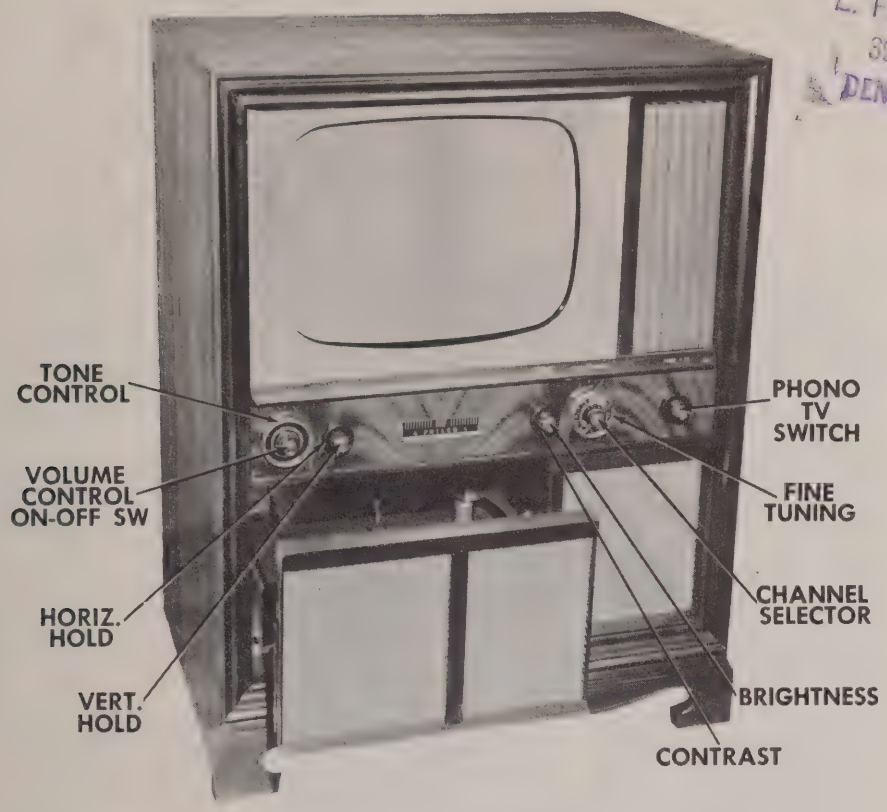

PHILCO 53-T1883

TRADE NAME	Philco Models 53-T1883, T1884, T1886, T1886L, T2183 (RF-IF Ch. 44, Runs 1 thru 6) (Sweep Ch. G4, Run 1) Code 125 (TV Chassis only)
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.
TYPE SET	Television - Phono Combination
TUBES	Twenty
POWER SUPPLY	110-120 Volts AC - 60 Cycle RATING 1.12 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 26.6MC, Sound IF 22.1MC (Intercarrier)

INDEX

Alignment Instructions 6, 7
Disassembly Instructions 20
Horizontal Sweep Circuit Adjustments 13
Parts List and Descriptions ..... 15 thru 18
Photographs
Cabinet - Rear View 13
Capacitor and Alignment Identification (RF-IF Chassis) 4, 9
Capacitor and Alignment Identification (Sweep Chassis) 14, 19
Chassis - Top View (RF-IF) 3
Chassis - Top View (Sweep) 11
High voltage compartment 22
Photographs (Con't)
RF Tuner 10
Resistor and Inductor Identification (RF-IF Chassis) 12, 21
Resistor and Inductor Identification (Sweep Chassis) 23, 24
Resistance Measurements 8
Schematic 2
Servicing in the Field 20
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

FOR SERVICE INFORMATION ON RECORD CHANGER SEE PHILCO MODEL M-22, PHOTOFACT SET 140, FOLDER 6, OR RECORD CHANGER MANUAL CM-4.

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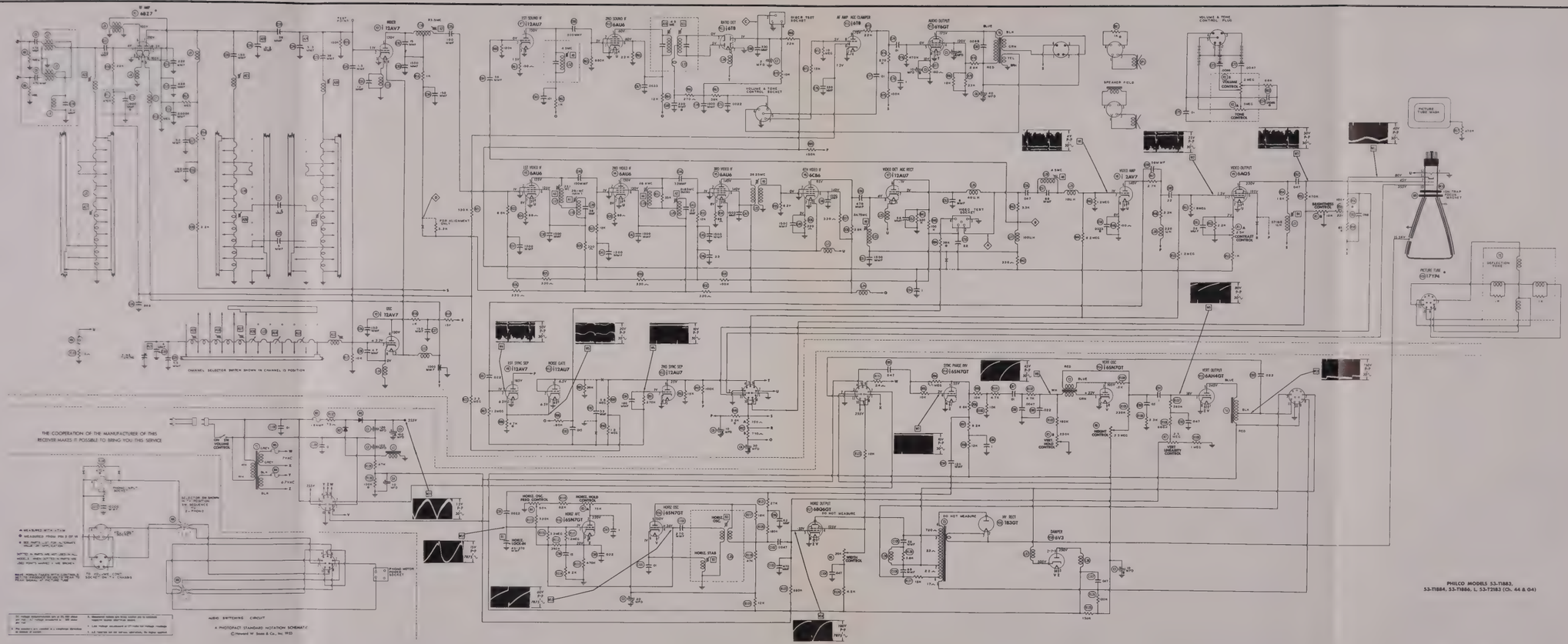
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A PHOTOFACT STANDARD NOTATION SCHEMATIC
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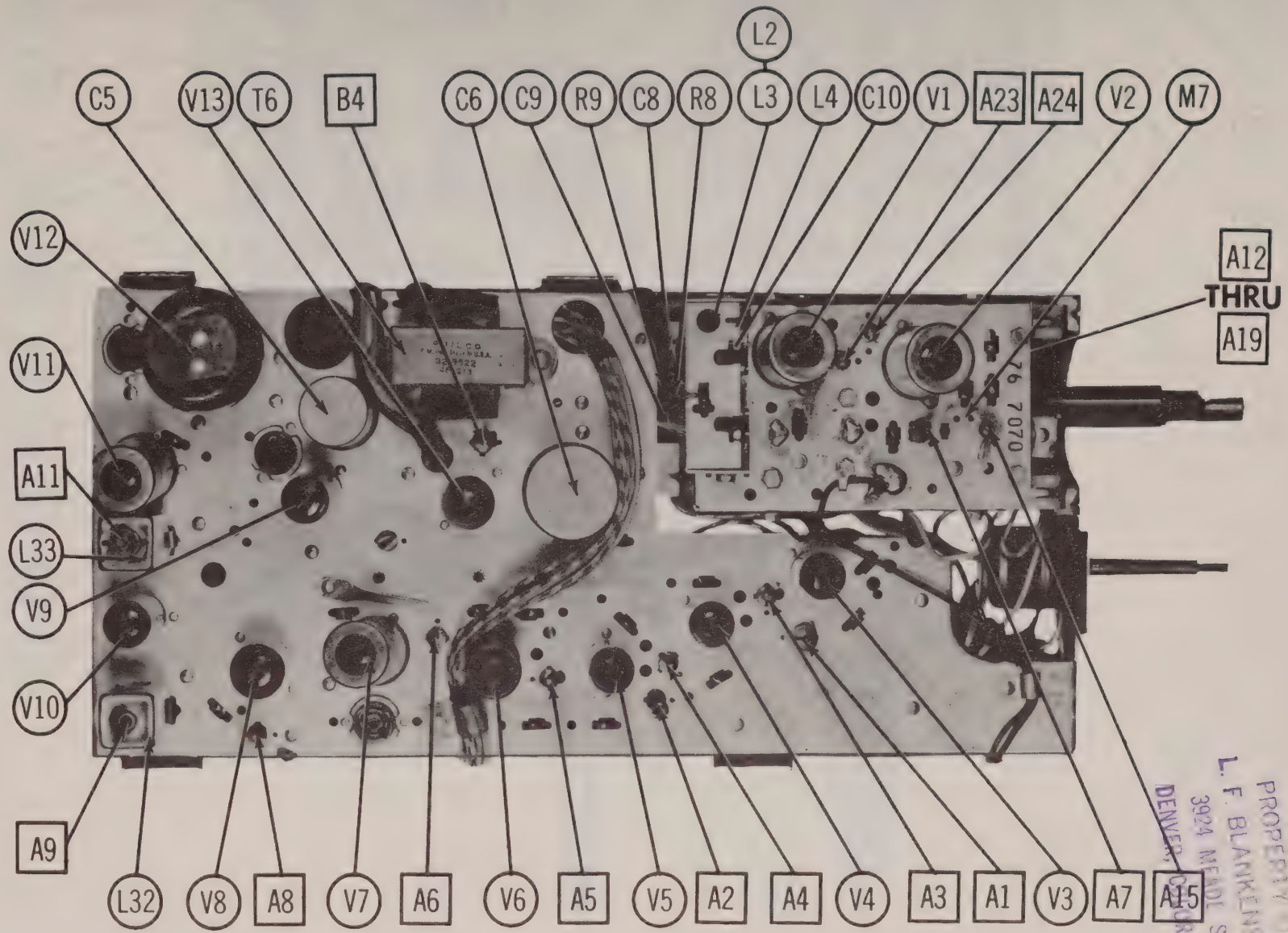

RF-IF CHASSIS-TOP VIEW

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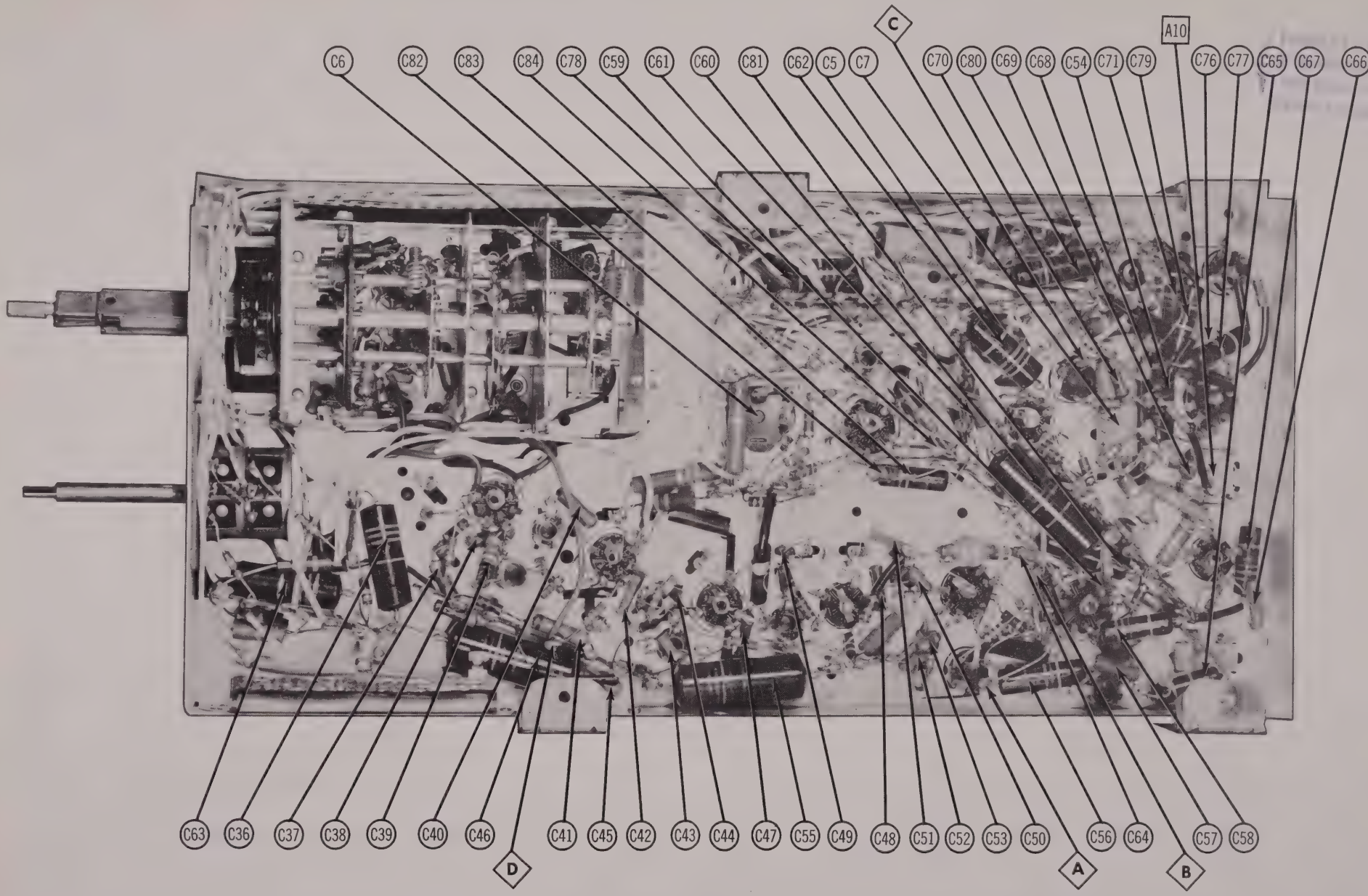
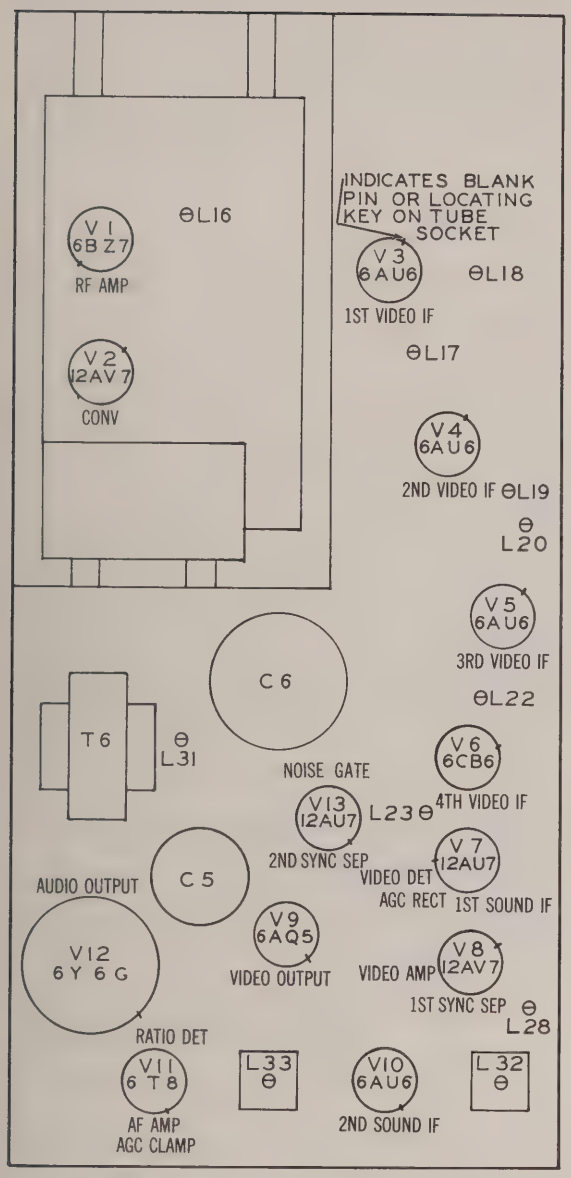
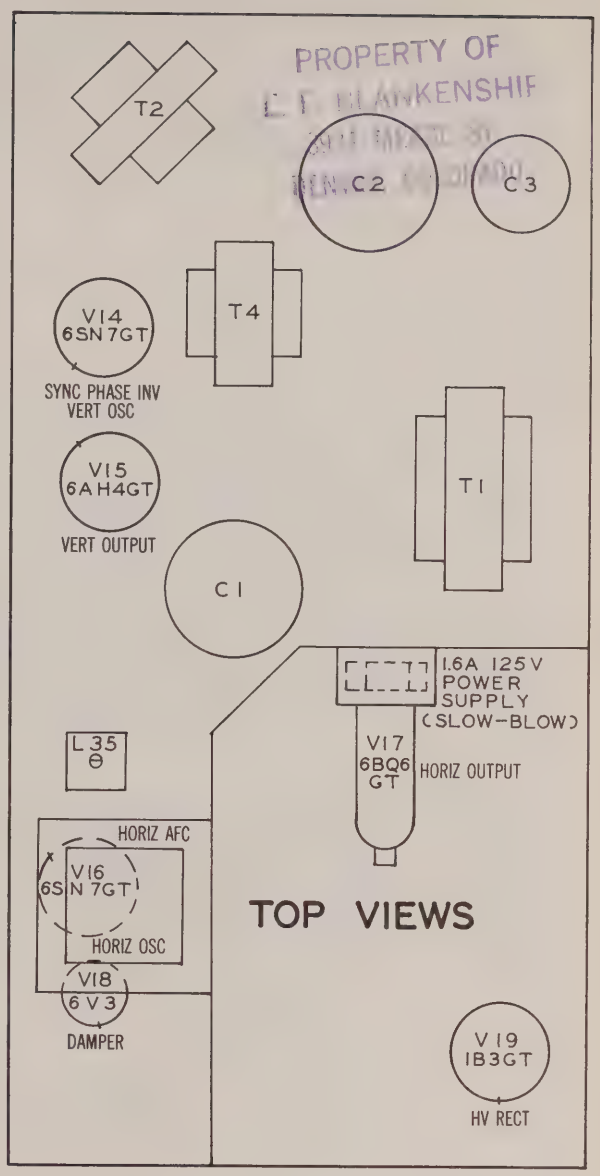


RF-IF CHASSIS-BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART





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TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-Selenium Rectifiers (M1 & M2) Fuse (M3)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, v3, V4, V5, V6, V7
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V8, V9, V20
Has pic, no sound-V7, V10, V11, V12
Overloaded picture-V7, V11

SYNC FAILURE
No vert. sync-V14
No horiz. sync-V14, V16
No vert. or horiz. sync-V13, V14

SWEEP FAILURE
No raster, has sound-V16, V17, V18, V19, V20
No vertical deflection-V14, V15
Poor vert. linearity or foldover-V14, V15
Poor horiz. linearity or foldover-V16, V17, V18
Narrow picture-V16, V17, V18, V19, M1, M2
Vert. off freq-V14
Horiz. off freq-V14, V16

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage. Use an isolation transformer to protect the test equiptment.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 Volt battery to the junction of R39 and R40. Connect the positive lead to chassis. Preset A1 and A2 fully counter-clockwise. Preset A3 and A4 to the center of their ranges. Set the contrast control fully counter-clockwise and the brightness control to give a dim raster.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	.001MFD	High side to pin 1 (grid) of 12AV7 (V2). (This point accessible on tuner top as a test pattern). Low side to chassis.	28.1MC (Unmod.)	Any not used locally	DC probe to point (A) Common to point (B)	A1	Use zero bias. Adjust for MINIMUM deflection.
2.	"	"	21.85MC	"	"	A2	"
3.	"	"	23.1MC	"	"	A3	Use 3 Volt bias. Adjust for maximum deflection.
4.	"	"	26.6MC	"	"	A4	"
5.	"	"	26.25MC	"	"	A5	"
6.	"	"	24.75MC	"	"	A6	"
7.	"	"	23.5MC	"	"	A7	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.001MFD	High side to pin 1 (grid) of 12AV7 (V2). Low side to chassis.	24MC (10MC Swp)	22.5MC 24.5MC 26.6MC	Any not used locally.	Vert. amp to point (A) Low side to chassis.		Check for response curve similar to Fig.1. If necessary make minor adjustments of A3 thru A7 for desired response.

SOUND IF ALIGNMENT

Remove the first video IF tube (V3) from its socket. Adjust the volume control for moderate output.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	2200Ω Carbon Resistor	High side thru 2200Ω to point (A) Low side to chassis.	4.5MC (400~Mod)	Any not used locally	DC probe to point (C) Common to chassis.	A8, A9, A10, A11	Adjust for maximum deflection. Maximum for A11 should also be point of MINIMUM speaker volume.
10.	"	"	"	"	NOT USED	A11	Adjust for MINIMUM speaker volume.

OSCILLATOR ALIGNMENT

Preset the fine tuning control to the center of its range (the stop on the cam centered on channel 6 adjustment screw). Connect a 3300 ohm resistor in series with the red lead from the tuner. The junction of the resistor and the red lead in alignment point D. Starting with channel 13, every other coil is tunable, therefore it is possible to set either of two adjacent channels on exact frequency, ie., 13 or 12, 11 or 10, etc.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistor	Across antenna terminals with 120 Ω in each lead.	Not used.	237.85MC (Unmod) 225.85MC 213.85MC	13 11 9	Vert. amp to point (D) Low side to chassis.	A12 A13 A14	Adjust for zero beat indication on the scope.
12.	"	"	"	207.85MC	8	"	A15	Check channel 8 oscillator frequency. If too high, Adjust A15 clockwise-if too low adjust counter clockwise.
13.	"	"	"	201.85MC 109.85MC 93.85MC 81.85MC	7 6 4 2	"	A16 A17 A18 A19	Adjust for zero beat indication on scope.

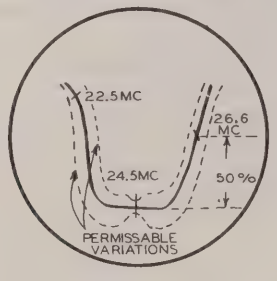


FIG. 1

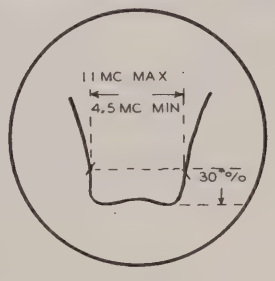


FIG. 2

ALIGNMENT INSTRUCTIONS (CONT.)

RF ALIGNMENT

Disconnect the white (AGC) lead from the tuner and connect to the negative lead of a 1.5 Volt battery. Connect the positive lead to chassis. Connect a 330 ohm resistor from the green lead to chassis. Leave the 3300 ohm resistor connected as under oscillator alignment. Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

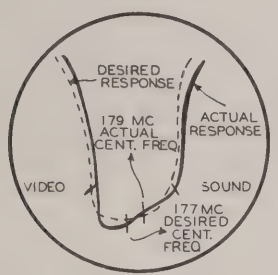
	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	213MC	13	Vert. amp to point (D) Low side to chassis.	A20, A21 A22	Detune A20 until a single peak appears Adjust A21 to place marker at center of peak. Adjust A22 for maximum height and symmetry of peak.
15.	"	"	"	211.25MC 213 MC 215.75MC	"	"	A20, A21	Readjust for a symmetrical response curve similar to Fig. 2.
16.	"	"	177MC (10MC Swp)	177MC	7	"	A23, A24	Examine response curve for center frequency and tilt. If the response is tilted adjust A23 and A24 until response is a mirror image of the original. This is necessary to compensate for effects of channel 13 adjustments. See Figs. 3A and 3B for example of compensated response curve. Repeat steps 15 and 16 until proper response is obtained on both channels 7 and 13.
17.	"	"	85MC (10MC Swp)	85MC	6	"	A25, A26 A27	Detune A25 until a single peak appears (caution:do not turn A25 excessively or it will fall out of the coil). Adjust A26 so that 85MC occurs at center of peak. Adjust A27 for maximum amplitude and symmetry of peak.
18.	"	"	"	83.25MC 85MC 87.75MC	"	"	A25, A26	Readjust A25 and A26 for response similar to Fig. 2.

4.5MC TRAP ALIGNMENT

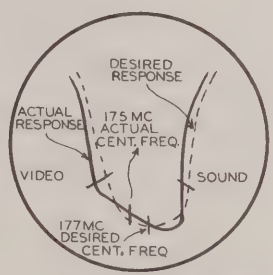
After alignment has been completed turn set on and tune in TV station. If 4.5MC beat interference is noted in picture retouch A8 for minimum interference.

VIDEO OUTPUT PEAKING COIL ADJUSTMENT

This coil has been properly aligned at the factory and ordinarily will require no readjusting. On some stations, however, where excessive overshoot or smear is present, slight adjustment may improve picture quality at the possible sacrifice of quality on other stations. In any case, adjustment should not be make unless the rest of the receiver is known to be properly aligned. Tune in the station where the poor picture quality is noted and adjust B4 for least smear and trailing whites. Check other channels to see that quality has not been impaired.



·ORIGINAL
3 A

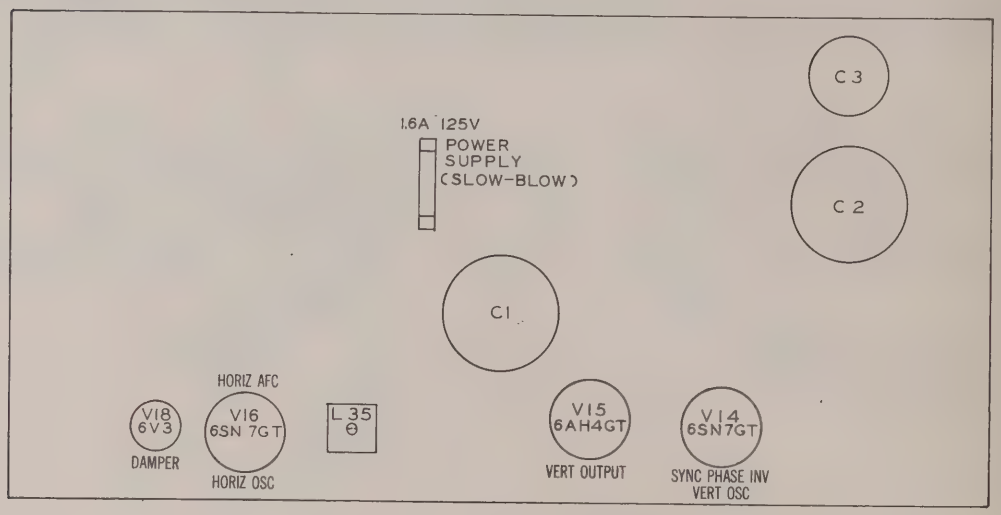


COMPENSATED
3 B

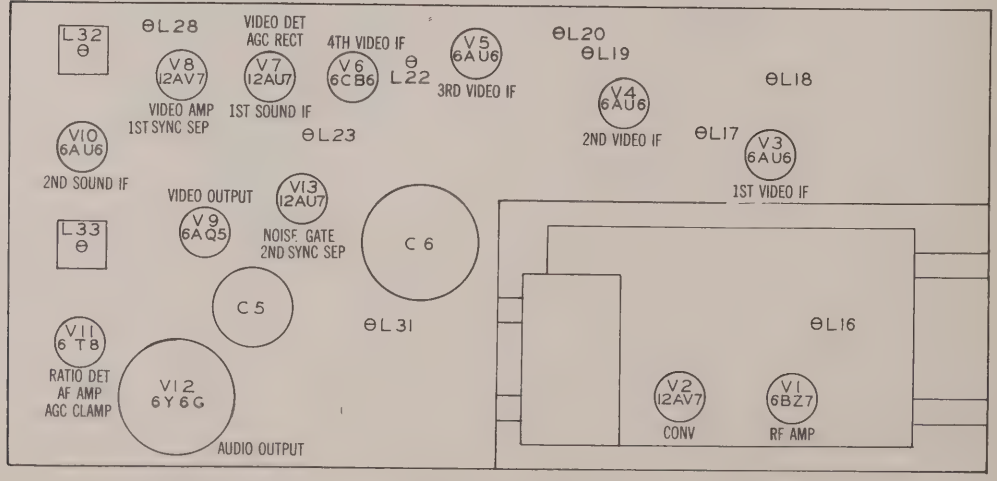
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BZ7	†3.3KΩ	500KΩ	INF	0Ω	.1Ω	INF	9 Meg	0Ω	0Ω
V 2	12AV7	†3.2KΩ	100KΩ	0Ω	.1Ω	.1Ω	†16KΩ	10KΩ	.3Ω	0Ω
V 3	6AU6	530KΩ	0Ω	0Ω	.1Ω	†2.2KΩ	†2.2KΩ	68Ω		
V 4	6AU6	530KΩ	0Ω	0Ω	.1Ω	†1.8KΩ	†1.8KΩ	68Ω		
V 5	6AU6	530KΩ	0Ω	0Ω	.1Ω	†1.5KΩ	†1.5KΩ	68Ω		
V 6	6CB6	.2Ω	220Ω	0Ω	.1Ω	†7.1KΩ	†1.8KΩ	0Ω		
V 7	12AU7	†2.5KΩ	120Ω	150Ω	.1Ω	.1Ω	330KΩ	6.8KΩ	3.4KΩ	0Ω
V 8	12AV7	†5.6KΩ	8 Meg	4.7KΩ	0Ω	0Ω	†11.6KΩ	1.1Meg	100Ω	.1Ω
V 9	6AQ5	800KΩ	350Ω	0Ω	.1Ω	†1.8KΩ	†750Ω	800KΩ		
V 10	6AU6	680KΩ	0Ω	0Ω	.1Ω	†9.5KΩ	†9.5KΩ	0Ω		
V 11	6T8	INF	†40KΩ	INF	0Ω	.1Ω	9 Meg	0Ω	10 Meg	392KΩ
V 12	6Y6G	INF	.1Ω	†1.1KΩ	†4.8KΩ	470KΩ	†0Ω	0Ω	180Ω	
V 13	12AU7	36KΩ	36KΩ	4.7KΩ	0Ω	0Ω	15KΩ	7.5Meg	0Ω	.1Ω
V 14	6SN7GT	250KΩ	#1.3Meg	0Ω	1 Meg	†13KΩ	0Ω	0Ω	.1Ω	
V 15	6AH4GT	2.2Meg	0Ω	INF	1.6Meg	†307Ω	INF	.1Ω	0Ω	
V 16	6SN7GT	1 Meg	†20KΩ	260KΩ	230KΩ	†60KΩ	55Ω	.1Ω	0Ω	
V 17	6BQ7GT	INF	.1Ω	INF	†7.6KΩ	590KΩ	INF	0Ω	0Ω	Top Cap #25Ω
V 18	6V3	INF	†1.9Ω	INF	.1Ω	0Ω	INF	†1.9Ω	Pin 8 INF	Pin 9 †1.9Ω Top Cap 270KΩ
V 19	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap #745Ω
V 20	17YP4	0Ω	500KΩ	Pin 10 #120KΩ	Pin 11 125KΩ	Pin 12 .1Ω				

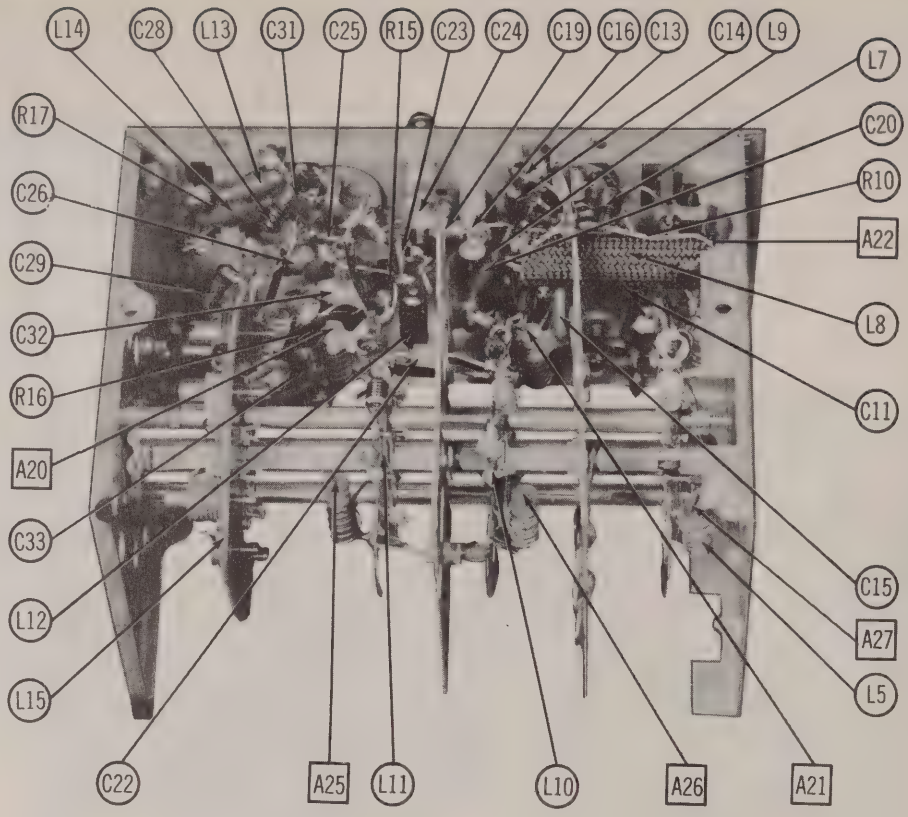
† MEASURED FROM OUTPUT OF M2
#MEASURED FROM TOP CAP OF V18



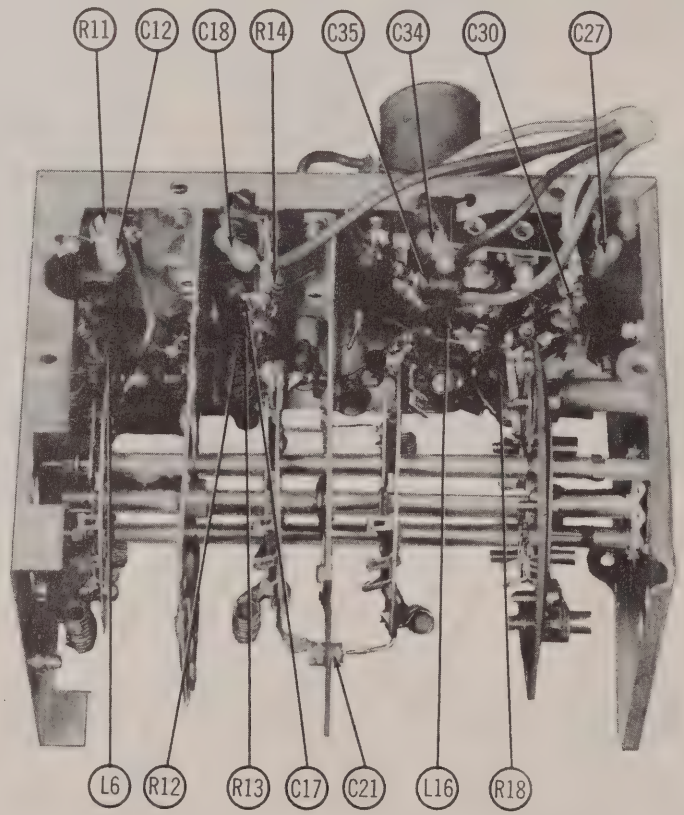
BOTTOM VIEWS



TUBE PLACEMENT CHART

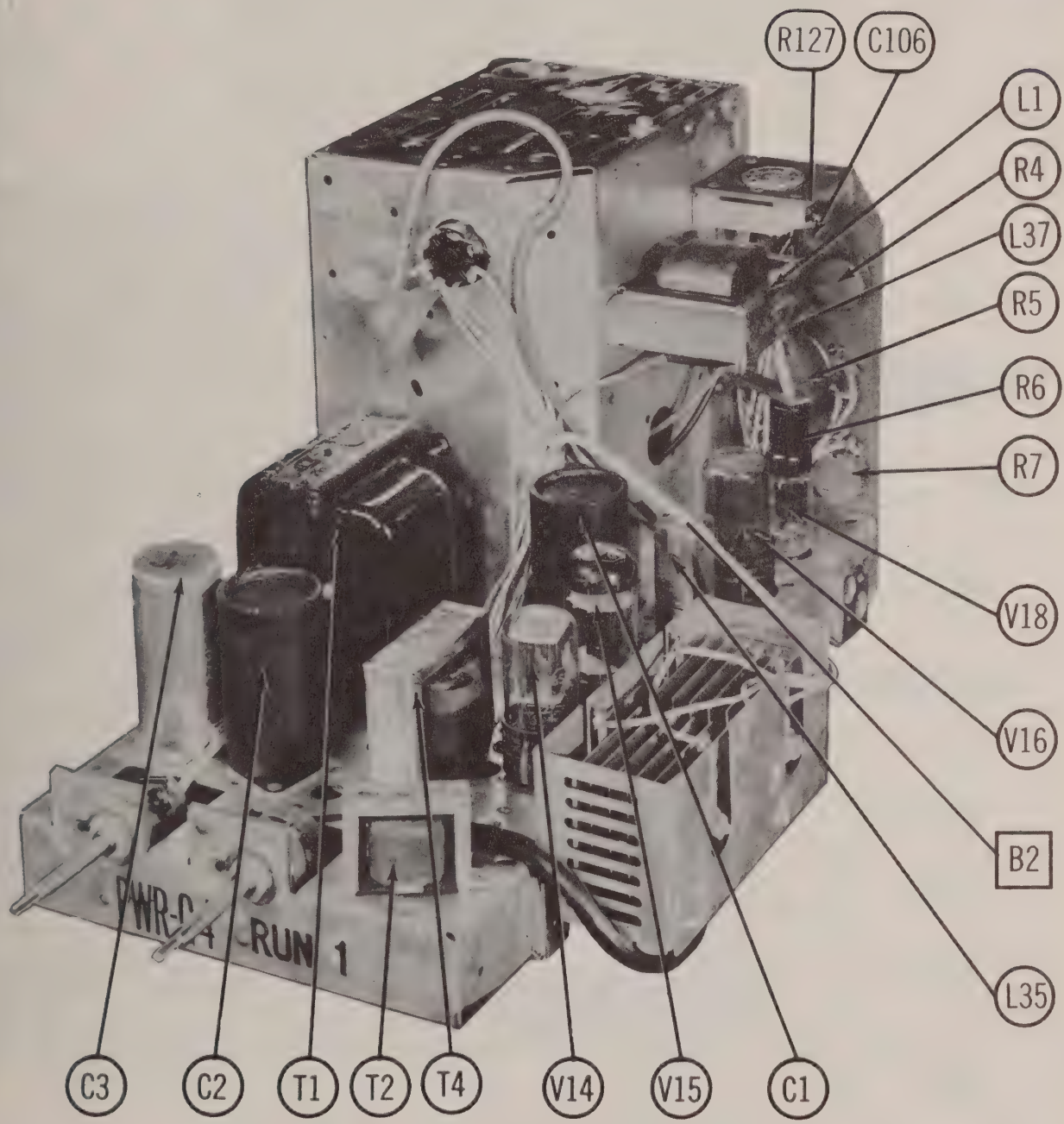


RF TUNER-RIGHT SIDE

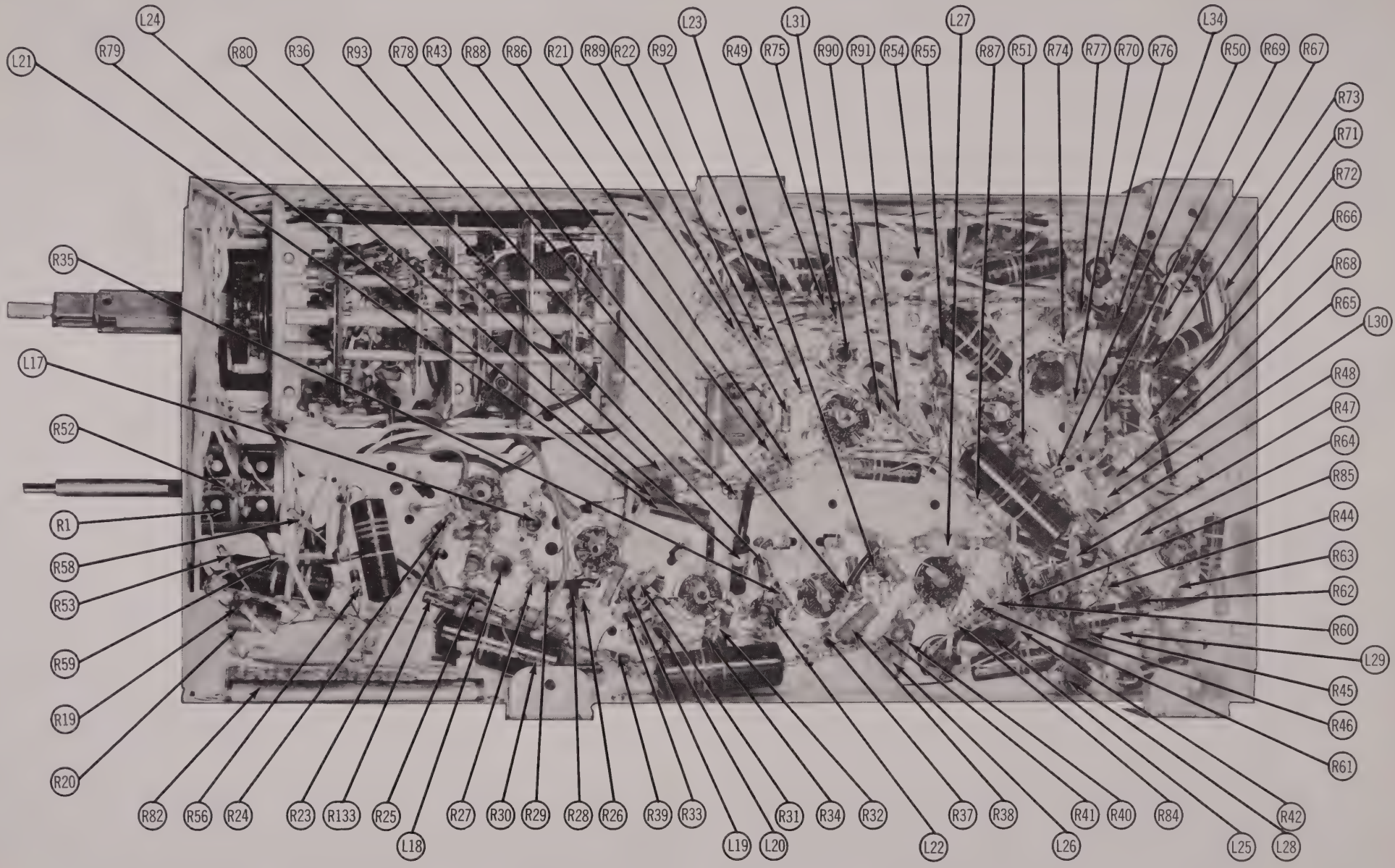


RF TUNER-LEFT SIDE

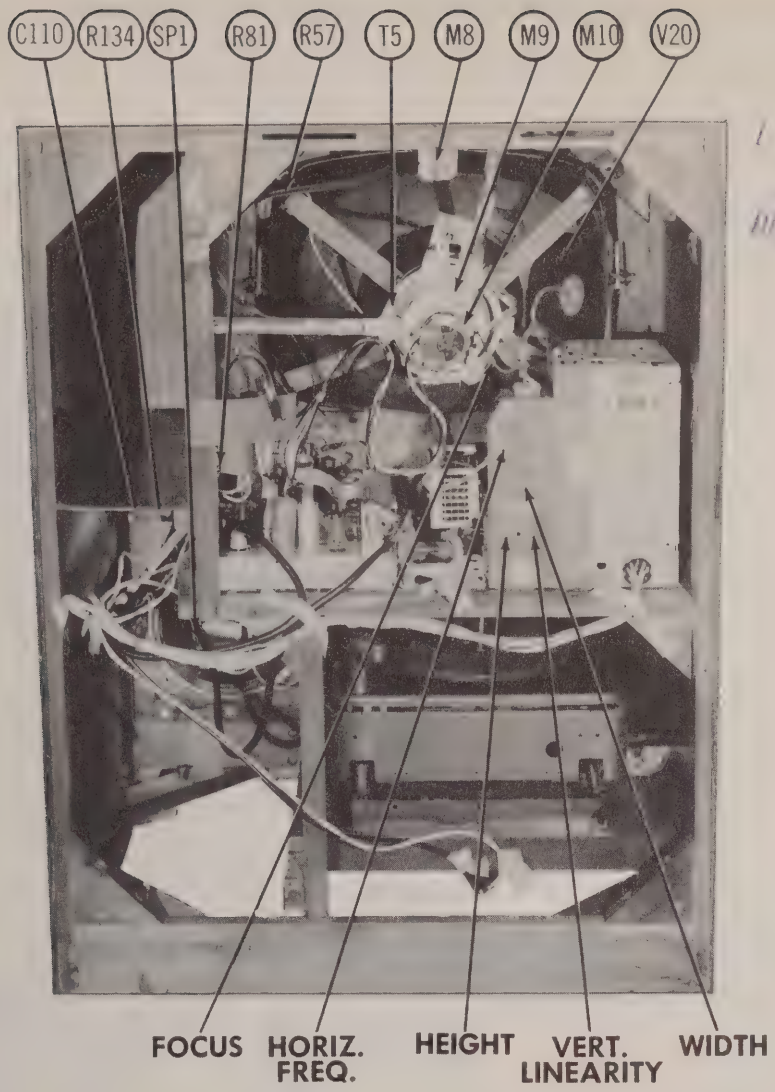
PROPERTY OF
L. F. ELA[illegible]SHIP
3924 [illegible] ST.
DENVER, [illegible]



SWEEP CHASSIS-TOP VIEW



RF-IF CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CABINET-REAR VIEW

PROPERTY OF

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

If normal adjustment of the horizontal hold control fails to maintain horizontal sync adjust as follows:

Turn the horizontal hold control fully clockwise.

Adjust the horizontal frequency control until 4 diagonal black bars appear, sloping to the right.

Turn the horizontal hold control counter clockwise until the picture comes in, then out of sync. If necessary, momentarily turn to another channel to throw the picture out of sync.

Turn the horizontal hold control slowly clockwise and note the least number of diagonal black bars appearing just before the picture falls into sync.

Adjust the horizontal lock-in trimmer (B1) for 2 or $2\frac{1}{2}$ bars just before synchronization.

If the above adjustments do not give satisfactory synchronization it may be necessary to adjust the horizontal stabilizing slug (B2).

Connect an oscilloscope through a 15MMF capacitor to pin 6 (cathode) of 6SN7 (V16). Adjust B2 for a curve similar to Fig. 4.

The average line of the scope is established by momentarily shorting the input leads of the scope. Points "A" should coincide with the average line of scope.

Turn the horizontal hold control fully clockwise.

Adjust the horizontal frequency control until 4 diagonal black bars appear, sloping to the right.

If 4 diagonal black bars cannot be obtained by adjusting the horizontal frequency control as above, adjust the horizontal oscillator slug (B3) for the desired result.

Adjust the width control for a picture slightly wider than necessary to fill the picture mask horizontally.

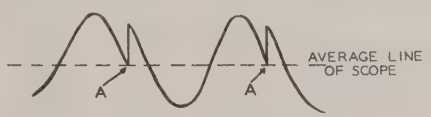
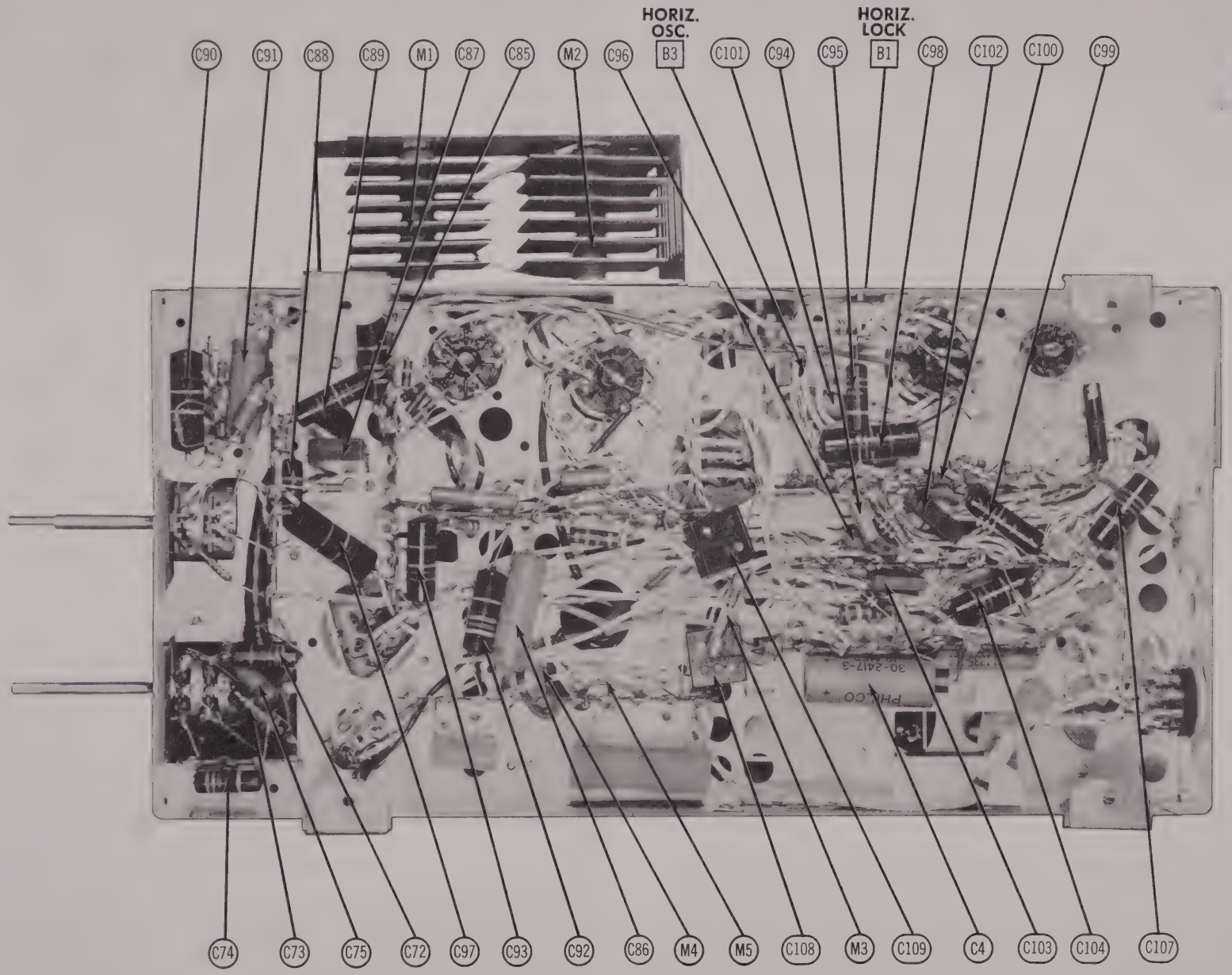


FIG. 4



SWEEP CHASSIS BOTTOM VIEW - CAPACITOR AND ALIGNMENT IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		PHILCO PART No.	STANDARD REPLACEMENT		
V1A	RF Amplifier	6BZ7	6BZ7	9AJ	
B	RF Amplifier	6BQ7	6BQ7	9AJ	
V2A	Converter	12AV7	12AV7	9A	
B	Converter	12AZ7	12AZ7	9A	
V3	1st. Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd. Video IF Amp.	6AU6	6AU6	7BK	
V6	4th. Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Detector - AGC Rectifier - 1st. Sound IF Amp.	12AU7	12AU7	9A	
V8	Video Amplifier - 1st. Sync Separator	12AV7	12AV7	9A	
V9	Video Output	6AQ5	6AQ5	7BZ	
V10	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V11	Ratio Detector - AF Amplifier - AGC Clamper	6T8	6T8	9E	
V12	Audio Output	6Y6G	6Y6G	7S	
V13	Noise Gate - 2nd. Sync Separator	12AU7	12AU7	9A	
V14	Sync Phase Inv. - Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V15	Vert. Output	6AH4GT	6AH4GT	8EL	
V16	Horiz. AFC - Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V17	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V18	Damper	6V3	6V3	9BD	
V19	HV Rectifier	1B3GT	1B3GT	3C	

L. F. D. ANDERSHIP
3924 MEADE ST.
DENVER, COLORADO

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA			RTMA BASE TYPE	NOTES
	PHILCO PART No.	SYLVANIA PART No.			
V20A	17YP4	17YP4		12D	
B	20DP4A	20DP4A		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1	120	150	30-2570-66	E4A131		XA007		FP140	TVL-1428	
C2	120	150	30-2570-66	E4A131		XA007		FP140	TVL-1428	
C3A	■100	300	30-2584-15	AFH3-102		D108		FP255	TVL-3765	
B	▲10	450						TC72		
C	▲20	300								
C4	10	50	30-2417-3	PRS250/12		BR105		TC32	TVA-1304	
C5A	■20	300	30-2584-10	AFH2-50		BO39		FP330.5	TVL-3580	
B	▲10	50								
C6A	▲10	300	30-2584-9	AFH4-124		DO17		FP344.5	TVL-3785	
B	▲30	300								
C	■40	300								
C7	2	50	30-2417-7	E26E6		BBR2-50T		TC302	TVA-1301	
C8	470		62-147001001	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C9	470		62-147001001	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C10	20		62-020309011	SI20	D6-200		GP1K-200	UC-542	5GA-Q2	
C11	150		62-115001011	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C12	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	Note 1
C13	220		30-1225-11	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C14	220		30-1225-11	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C15	20000		30-1238-5						5HK-S2	
C16	.5-3				829-3			CT565A		
C17	150		62-115001011	SI150	D6-151	TM5T15	GP2K-151	UC-5415	5GA-T15	
C18	150		62-115001011	SI150	D6-151	TM5T15	GP2K-151	UC-5415	5GA-T15	
C19	.59									
C20	150		62-115001011	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA -T15	
C21	1.2		30-1221- 7		TCZ-1.2		NP0K-1R2			
C22	5		30-1221-13	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C23	39		62-039409011	SI39	D6-390		GP1K-390	UC-5439	5GA-Q39	
C24	.5-3		31-6520-3		829-3			CT565A		
C25	1.5		30-1224-59				N330K-1R5			
C26	150		62-115001011	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C27	150		62-115001011	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C28	4.7		30-1224-85				N750K-4R7		5TCUB-V5	
C29	7.5		30-1224-84				N750K-7R5			
C30	1-6		31-6520-2							
C31	12						N150K-120			
C32	15		62-015409011	SI15	D6-150		GP1K-150	UC-5415	5GA-Q15	
C33	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C34	150		62-115001011	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C35	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C36	.068	400		P488-068		PTE4S68			4TM-S68	
C37	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C38	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C39	39		30-1224-63				N220K-390			
C40	100		62-11009001	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C41	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C42	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C43	22		62-022009001	SI22	D6-220	5W5Q25	GP1K-220	UC-5422	5GA-Q22	
C44	33		62-033009001	SI33	D6-330		GP1K-330	UC-5433	5GA-Q33	
C45	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C46	.22	200		P488-22		PTE4P22		PT4025	2TM-P22	
C47	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C48	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C49	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C50	470		62-147001021	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C51	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C52	56		62-056409011	SI56	D6-560		GP1K-560	UC-5456	5GA-Q56	
C53	8		30-1224-13							
C54	.1	200		P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C55	.22	200		P488-22		PTE4P22		PT4025	2TM-P22	
C56	.047	200		P488-047	DF-503	PTE4S47		PT4147	2TM-S47	
C57	68		62-068409011	SI68	D6-680		GP1K-680	UC-5468	5GA-Q68	
C58	.0033	400		P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D3	Note 2
C59	56		62-056409011	SI56	D6-560		GP1K-560	UC-5456	5GA-Q56	
C60	.22	400		P488-22		PTE4P22		PT4025	4TM-P22	
C61	56		62-056409011	SI56	D6-560		GP1K-560	UC-5456	5GA-Q56	
C62	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C63	.068	400		P488-068		PTE4S68			4TM-S68	
C64	56		62-056409011	SI56	D6-560		GP1K-560	UC-5456	5GA-Q56	
C65	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C66	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C67	.0033	400		P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D3	
C68	330		62-133001001	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C69	330		62-133001001	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	Note 3
C70	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C71	.0022	400		P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C72	.0047	600		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C73	.0068	400		P688-0068	D6-682	PTE6D68	GP2-333-682	PT6268	6TM-D68	
C74	.0068	400		P688-0068	D6-682	PTE6D68	GP2-333-682	PT6268	6TM-D68	Note 4
C75	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C76	330		62-133001001	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C77	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C78	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C79	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C80	.0068	1000	45-3505-93	P1088-0068		PTE16D68		PT16268	MB-D68	
C81	.022	400		P488-022	DF-203	PTE4S22		PT4122	4TM-S22	
C82	33		62-033009001	SI33	D6-330		GP1K-330	UC-5433	5GA-Q33	
C83	.015	200		P288-015		PTE6S15		PT6215	6TM-S15	
C84	180	500	60-10185417							
C85	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C86	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C87	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C88	.0047	600		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C89	.022	200		P488-022	DF-203	PTE4S22		PT4122	4TM-S22	
C90	.05	600		P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C91	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C92	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C93	.022	600		P688-022	DF-203	PTE6S22		PT6122	6TM-S22	
C94	120	500	60-10125237							
C95	.0022	400		P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C96	82	500	60-00825337							
C97	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C98	.15	200		P288-15		PTE4P15		PT4015	2TM-P15	
C99	.022	200		P488-022	DF-203	PTE4S15		PT4122	4TM-S22	
C100	270	500	60-10275337	5R5T3		5R5T3		MCB241	MS-33	
C101	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C102	.0047	600		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C103	470	500	60-10475411	1469-0005		5R5T5		MCB245	MS-35	
C104	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C105	56	2000	30-1243-5							
C106	68	4000	30-1246-1							
C107	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C108	.01	600		689ZGXY-01		PJ6S1		PT611	6TM-S1	
C109	.01	600		689ZGXY-01		PJ6S1		PT611	6TM-S1	
C110	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	

Note 1. Original item combines C12 and R11 in one unit.
Note 2. Some Models use .0047MFD in this application.
Note 3. Some Models use 390MMF in this application.
Note 4. Some Models use .015MFD in this application.

CONTROLS

ITEM No	RATING RESISTANCE	RATING WATTS	PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2500Ω	2	33-5563-42	QJ-391†	RTV-345	SBBT-652-S		Contrast-Wire Wound-Panel
B	10KΩ	2						Brightness-Wire Wound-Rear
R2A	5 Meg §	½	33-5563-28	QJ-340*	RTV-360			Tone-Panel
B	2 Meg							Volume & Sw. Tap ① 1 Meg-Rear
R3A	75KΩ		33-5563-43	QJ-302**	RTV-241	SBB-711	UF753L	Horiz. Hold-Panel
B	250KΩ						UR254L	Vert. Hold-Rear
R4A	50KΩ		33-5565-30	QH-123	AG-44-S	AB-31	SU-35	Horiz. Osc. Frequency
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	20KΩ	4	33-5546-43	4WK-20K	A10-20K	SVP-996	M20MP	Width-Wire Wo und
B	Shaft		Not Req.		FKS-1/4	Not Req.	Not Req.	Attach to R5A
R6A	2.5Meg	½	33-5565-32	QH-239	AG-84-S	AB-83	SU-565	Height
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R6A
R7A	2.5Meg	½	33-5565-32	QH-239	AG-84-S	AB-83	SU-565	Vert. Linearity
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R7A

§ Overall value may exceed 5 Meg.
* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS AND SHAFTS B12-141 & P1-200(Panel)
B18-139X & P1-216 (Rear) & SWITCH 76-1.
** CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B11-125 & P1-200 (Panel)
B11-130 & P1-216 (Rear).
† CONCENTRIKIT EQUIVALENT & BASE ELEMENTS & SHAFTS W17-111 & P3-129 (Panel)
WR11-116 & R8-213 (Rear).

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	PHILCO PART No.	IRC PART No.	NOTES
R8	1 Meg	½		BTS-1 Meg	
R9	1 Meg	½		BTS-1 Meg	
R10	22KΩ	½		BTS-22K	
R11	470KΩ	½	*	BTS-470K	
R12	1 Meg	½		BTS-1 Meg	
R13	1 Meg	½		BTS-1 Meg	
R14	1000Ω	½		BTS-1000	
R15	100KΩ	½		BTS-100 K	
R16	1000Ω	½		BTS-1000	

ITEM No.	RATING OHMS	RATING WATT	PHILCO PART No.	IRC PART No.	NOTES
R17	10KΩ	½			
R18	1000Ω	½		BTS-1000	
R19	15KΩ	2	66-3155340		
R20	2200Ω	1	66-2224340		
R21	330KΩ	½		BTS-330K	
R22	3.3Meg	½		BTS-3.3Meg	
R23	6800Ω	½		BTS-6800	
R24	68Ω	½			
R25	330Ω	½		BTS-330	

RESISTORS (CONT.)

ITEM No.	RATING OHMS	RATING WATT	PHILCO PART No.	IRC PART No.	NOTES
R26	330Ω	½		BTS-330	
R27	12KΩ	½		BTS-12K	
R28	68Ω	½			
R29	330Ω	½		BTS-330	
R30	330Ω	½		BTS-330	
R31	33KΩ	½		BTS-33K	
R32	330Ω	½		BTS-330	
R33	12KΩ	½		BTS-12K	
R34	68Ω	½			
R35	82000Ω	½			
R36	220Ω	½		BTS-220	
R37	330Ω	½		BTS-330	
R38	5600Ω	1	66-2564340	BTA-5600	
R39	100KΩ	½		BTS-100K	
R40	100KΩ	½		BTS-100K	
R41	330KΩ	½		BTS-330K	
R42	3300Ω	½		BTS-3300	
R43	330Ω	½		BTS-330	
R44	8.2Meg	½		BTS-8.2Meg	
R45	1.2Meg	½		BTS-1.2Meg	
R46	100Ω	½		BTS-100	
R47	2700Ω	½		BTS-2700	
R48	3300Ω	½		BTS-3300	
R49	5600Ω	1	66-2564340	BTA-5600	Note 1
R50	1.2Meg	½		BTS-1.2Meg	
R51	1.8Meg	½		BTS-1.8Meg	
R52	2200Ω	½		BTS-2200	
R53	1000Ω	½		BTS-1000	
R54	1800Ω	7	33-1335-102	1 3/4A-1750	
R55	470KΩ	½		BTS-470K	
R56	100KΩ	½		BTS-100K	Note 2
R57	470KΩ	1	66-4474340	BTA-470K	
R58	22KΩ	½		BTS-22K	
R59	68KΩ	1		BTA-68K	Note 3
R60	120KΩ	½		BTS-120K	
R61	150Ω	½		BTS-150	
R62	1000Ω	½		BTS-1000	
R63	680KΩ	½		BTS-680K	
R64	12KΩ	1	66-3124340	BTA-12K	
R65	22KΩ	2		BTB-22K	
R66	270Ω	½		BTS-270	
R67	56KΩ-5%	½		BTS-56K-5%	
R68	33KΩ	½		BTS-33K	
R69	150KΩ	½		BTS-150K	
R70	10KΩ	½		BTS-10K	
R71	15KΩ	½		BTS-15K	
R72	10 Meg	½		BTS-10Meg	
R73	22KΩ	½		BTS-22K	
R74	270KΩ	½		BTS-270K	
R75	100KΩ	½		BTS-100K	
R76	470KΩ	½		BTS-470K	
R77	180Ω	2		BW-2-180	
R78	5600Ω	2	66-2565340	BTB-5600	
R79	33KΩ	1		BTA-33K	
R80	18KΩ	2	66-3185340	BTB-18K	

ITEM No.	RATING OHMS	RATING WATT	PHILCO PART No.	IRC PART No.	NOTES
R81	1000Ω	7	33-1335-89	1 3/4A-1000	Note 7
R82A	750Ω	12	33-3435-34		
B	750Ω				
R83	68KΩ	½		BTS-68K	
R84	39KΩ-5%	½		BTS-39K-5%	Note 4
R85	39KΩ-5%	½		BTS-39K-5%	
R86	180KΩ-5%	½		BTS-180K-5%	
R87	1.2Meg	½		BTS-1.2Meg	
R88	4700Ω	½		BTS-4700	Note 5
R89	5.6Meg	½		BTS-5.6Meg	
R90	1.2Meg	½		BTS-1.2Meg	
R91	270KΩ	½		BTS-270K	
R92	100KΩ	½		BTS-100K	
R93	15KΩ	½		BTS-15K	
R94	1 Meg	½		BTS-1Meg	
R95	10KΩ	½		BTS-10K	
R96	6800Ω	1	66-2685340	BTA-6800	
R97	8200Ω	1	66-28246340	BTA-8200	
R98	12KΩ	2	66-3125340	BTB-12K	
R99	10KΩ	½		BTS-10K	
R100	10KΩ	½		BTS-10K	
R101	4700Ω	½		BTS-4700	
R102	4700Ω	½		BTS-4700	
R103	180KΩ	½		BTS-180K	
R104	15KΩ	½		BTS-15K	
R105	330KΩ	1	66-4338340	BTA-330K	
R106	3300Ω	½		BTS-3300	
R107	560KΩ	½		BTS-560K	
R108	680KΩ	½		BTS-680K	
R109	1 Meg	½		BTS-1 Meg	
R110	82KΩ	½	66-3828344	BTS-82K	
R111	1.2Meg	½	66-5128344	BTS-1.2Meg	
R112	390KΩ-5%	½	66-4398244	BTS-390K-5%	
R113	470KΩ	½		BTS-470K	
R114	8200Ω	½		BTS-8200	
R115	330KΩ-5%	½	66-4338244	BTS-330K-5%	
R116	3.3Meg	½	66-5338344	BTS-3.3Meg	
R117	18KΩ	½	66-3188344	BTS-18K	
R118	47KΩ	½	66-3478344	BTS-47K	
R119	12KΩ	½		BTS-12K	
R120	180KΩ	½	66-4188344	BTS-180K	
R121	27KΩ	½		BTS-27K	
R122	680KΩ	½		BTS-680K	
R123	10KΩ	2	66-3105340	BTB-10K	
R124	4200Ω	5	33-1335-101	1 3/4A-4000	
R125	150KΩ	½		BTS-150K	
R126	120KΩ	½		BTS-120K	
R127	15KΩ	½		BTS-15K	
R128	5600Ω	2	66-2565340	BTB-5600	
R129	47KΩ	1	66-3474340	BTA-47K	
R130	100KΩ	½		BTS-100K	Note 6
R131	.24Ω	5	33-3448-17		
R132	7.5Ω	15	33-3448		
R133	10Ω	½			
R134	470KΩ	½		BTS-470K	Note 8

* Items R11 & C12 are combined in one unit.
Note 1. Some models use a 3900Ω resistor in this application.
Note 2. Some models use a 120KΩ resistor in this application.
Note 3. Some models use a 82KΩ resistor in this application.
Note 4. Some models use a 47KΩ resistor in this application.
Note 5. Some models use a 10KΩ resistor in this application.
Note 6. Some models use a 150KΩ resistor in this application.
Note 7. Used only with PM speakers.
Note 8. Not used in all models.

TRANSFORMER (FILAMENT)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC	7VAC	6.7VAC		32-8576				F-36A ①
	④ .75A	④ 6.15A	④ 5A						

① Parallel two 6 volt winding for each secondary.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	170Ω	330Ω	32-8431-4			TBO-4		Vert. Osc. Trans.
			32-8431-2 ①					
T3	782Ω tap ③ 171Ω, 39Ω 62Ω	0Ω	32-8555					Horiz. Output Trans.
T4	307Ω tap ② 9Ω		32-8539					Vert. Output Trans.
T5A	42Ω		32-9648		MDF-71 ②	TY-8 ②		Horiz. Deflection Coils
B	48Ω							Vert. Deflection Coils

① Alternate Vert. Osc. Trans.
② Use original deflection coil network.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T6	2.6KΩ	3.2Ω	190Ω	57Ω	32-8522	A-3849	A-2928 ①	RO-304 ①	S-1X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	PHILCO PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	8"	PM	3.2Ω	36-1626-20 36-1610-9 ① 36-1626-9 ①	ST-117 Mod. P8-T	8A21	Alternate speakers.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D.C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ~)	PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.325 ADC	46Ω	1.66HY	32-8537-1	C-2326		TR-1733 ①	

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	PHILCO PART No.	MERIT PART No.	NOTES
L2	Ant. Trans.	.6Ω	0Ω	76-7071		Includes C8, C9, C10, R8, R9.
L3	Ant. Trans	.6Ω	0Ω			Part of L2.
L4	FM Trap	0Ω				Part of L2.
L5	Ant. Coils	0Ω		76-7077		Includes wafer with coils.
L6	Fil. Choke	.1Ω		312-5132		
L7	Fil. Choke	.2Ω		32-4112-2		
L8	150Ω Artifical Line	.6Ω	0Ω	32-4527		
L9	RF Choke	.3Ω		32-4112-22		
L10	RF Coils	0Ω		76-6895		Includes wafer with coils.
L11	Mixer Grid Coils	0Ω		76-7098		Includes wafer with coils.
L12	Fil. Choke	.2Ω		32-4112-2		
L13	Fil. Choke	.2Ω		32-4112-2		
L14	Cathode Choke	.4Ω		32-4112-25		
L15	Osc. Coils	0Ω		76-6784		Includes wafer with coils.
L16	1st Video IF	.40CT		32-4359-12		
L17	2nd Video IF	.2Ω		32-4486	TV-112	
L18	28.1MC Trap	0Ω		32-4303-3		Tapped.
L19	3rd Video IF	.2Ω		32-4486	TV-112	
L20	21.85MC Trap	0Ω		32-4496		Tapped.
L21	Fil. Choke	.1Ω		32-4112-15		
L22	4th Video IF	.2Ω	.2Ω	32-4486-6		
L23	5th Video IF	.2Ω		32-4486	TV-112	
L24	RF Choke	.1Ω		32-4112-15		
L25	Fil. Choke	.1Ω		32-4112-15		
L26	Series Peaking Coil	2Ω		32-4143-16	TV-180	40 Microhenries.
L27	Shunt Peaking Coil	3.6Ω		32-4143-17	TV-181	100 Microhenries.
L28	4.5MC Trap	1.8Ω		32-4463-2	TV-151	
L29	Series Peaking Coil	.4Ω		32-4143-18		10 Microhenries
L30	Shunt Peaking Coil	4.4Ω		32-4480-15	TV-184	220 Microhenries.
L31	Variable Shunt Peaking Coil	5.5Ω		32-4467-7		57-167 Microhenries.
L32	Sound IF	5Ω		32-4449A		
L33	Ratio Det.	4.8Ω	.60CT	32-4450-5	TV-115	Tertiary winding - 1Ω
L34	Fil. Choke	.1Ω		32-4112-15		
L35	Horiz. Osc.	15Ω	45Ω	32-8551		Horiz. waveform winding - 55Ω
L36	Anti-Ringing Coil	45Ω		32-4542-2		2.5 Microhenries.
L37	RF Choke	2Ω		32-4112-24		
L38	RF Choke	2Ω		32-4112-24		

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	PHILCO PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.325	34-8003-8	NH5	6S2	102IA	6S350	350
		34-8003-7 ①					
M2	.325	34-8003-8	NH5	6S2	102IA	6S350	350
		34-8003-7 ①					

① Alternate selenium rectifier.

FUSES

ITEM No.	TYPE	RATING	PHILCO PART No. FUSE	PHILCO PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M3	3AG (Slo-Blo P/T)	1-6/10A 125V	45-2556-23		3150L.6 (3AG-1-6/10A Slo-Blo P/T)		MDV 1-6/10	
M4	Length of #26 wire				311010			
M5	Length of #26 wire				311010			

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	PHILCO PART No.	NOTES
M6	Bayonet	6-8	.15	Brown		Type #47

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3924 MEADE
DENVER

PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M7	RF Tuner	76-7070	
M8	Switch	42-1980	Some contacts not used
M9	Focus Assy.	76-6126-A	Includes centering device
M10	Ion Trap	76-6077-2	
B1	Trimmer Capacitor	31-6473-22	Horiz. Lock-in, 45MMF-370MMF
	Cabinet	10933	(Mahogany) Model 53-T1883
	Cabinet	10933-1	(Mahogany) Model 53-T1884
	Cabinet	10915	(Mahogany) Model 53-T1886
	Cabinet	10915-1	(Light) Model 53-T1886L
	Cabinet	10934	(Mahogany) Model 53-T2183
	Safety Glass	54-7943-60	Models 53-T1883, 53-T1884
	Safety Glass	54-7943-59	Models 53-T1886, 53-T1886L
	Safety Glass	54-7943-38	Model 53-T2183
	Mask	54-8645-5	Models 53-T1883, 53-T1884
	Mask	54-8645-4	Models 53-T1886, 53-T1886L
	Mask	54-8567-7	Model 53-T2183
	Knob	54-4799	Models 53-T1883, 53-T1884, 53-T1886, 53-T2183 (Brightness)
	Knob	54-4799-3	Model 53-T1886L (Brightness)
	Knob	76-6863-20	Model 53-T1883 (Channel Selector)
	Knob	76-6863-22	Models 53-T1884, 53-T1886, 53-T2183 (Channel Selector)
	Knob	76-6863-23	Model 53-T1886L (Channel Selector)
	Knob	54-4797	Models 53-T1883, 53-T1884, 53-T1886, 53-T2183 (Contrast)
	Knob	54-4797-1	Model 53-T1886L (Contrast)
	Knob	76-6104	All Models (Fine Tuning)
	Knob	54-4799	Model 53-T1883 (Function Switch) (Inner)
	Knob	54-4797-5	Model 53-T1883 (Function Switch) (Outer)
	Knob	54-4799-10	Model 53-T1886L (Function Switch)
	Knob	54-4799-8	Models 53-T1884, 53-T1886, 53-T2183 (Function Switch)
	Knob	54-4797	All Models. (Horiz. Hold)
	Knob	76-5794-2	Model 53-T1883 (Tone)
	Knob	76-6213	Models 53-T1884, 53-T1886, 53-T2183 (Tone)
	Knob	76-6213-3	Model 53-T1886L (Tone)
	Knob	54-4799	Models 53-T1883, 53-T1884, 53-T1886, 53-T2183 (Vert.Hold)
	Knob	54-4799-3	Model 53-T1886L (Vert. Hold)
	Knob	54-4799	Models 53-T1884, 53-T1886, 53-T2183 (Off/On Volume)
	Knob	54-4817-1	Model 53-T1883 (Off/On Volume)
	Knob	54-4799-3	Model 53-T1886L (Off/On Volume)

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	PHILCO PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M11	76-4649							

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	PHILCO PART No.	WALCO PART No.	JENSEN PART No.	
M12	45-9588	W-46TPS	PH-12 or PH-13	

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

For touch-up adjustment of the RF Tuner Oscillator Adjustments, it is necessary to remove the chassis from the cabinet (See disassembly instructions).

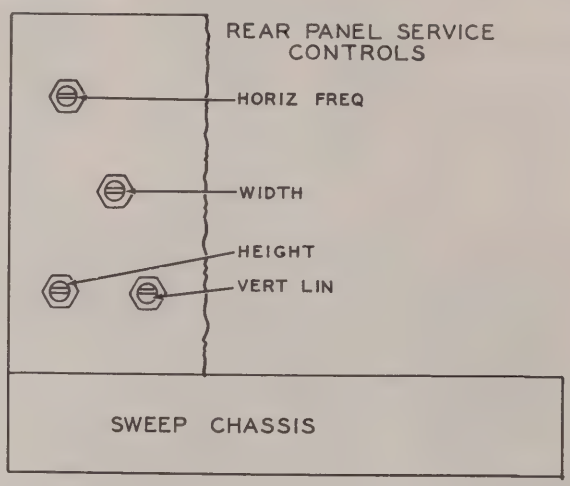
PIC TURE TUBE SAFETY GLASS CLEANING

To clean safety glass, remove 3 wood screws holding wood strip at bottom of glass. Remove strip and safety glass. Use extreme caution in removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION



HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For horizontal oscillator adjustment, turn horizontal hold control fully clockwise and adjust the horizontal oscillator frequency control until 4 diagonal bars appear. Turn the horizontal hold counter clockwise, then slowly clockwise and note the number of black bars present just before picture pulls into sync. Adjust the horizontal lock-in trimmer (located on side of chassis) until 2 to $2\frac{1}{2}$ bars are present just before picture pulls into sync. Adjustment of horizonal oscillator transformer should not be attemped in the field. For shop adjustment, see horiz. sweep circuit adjustment (page 13).

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate Sound IF Detector buzz, adjust the Ratio Detector Secondary (L33) located on top of chassis. (See tube placement chart).

FUSES

Three fuses are used. One for AC line protection and two wire fuses for filament protection located on bottom side of chassis.

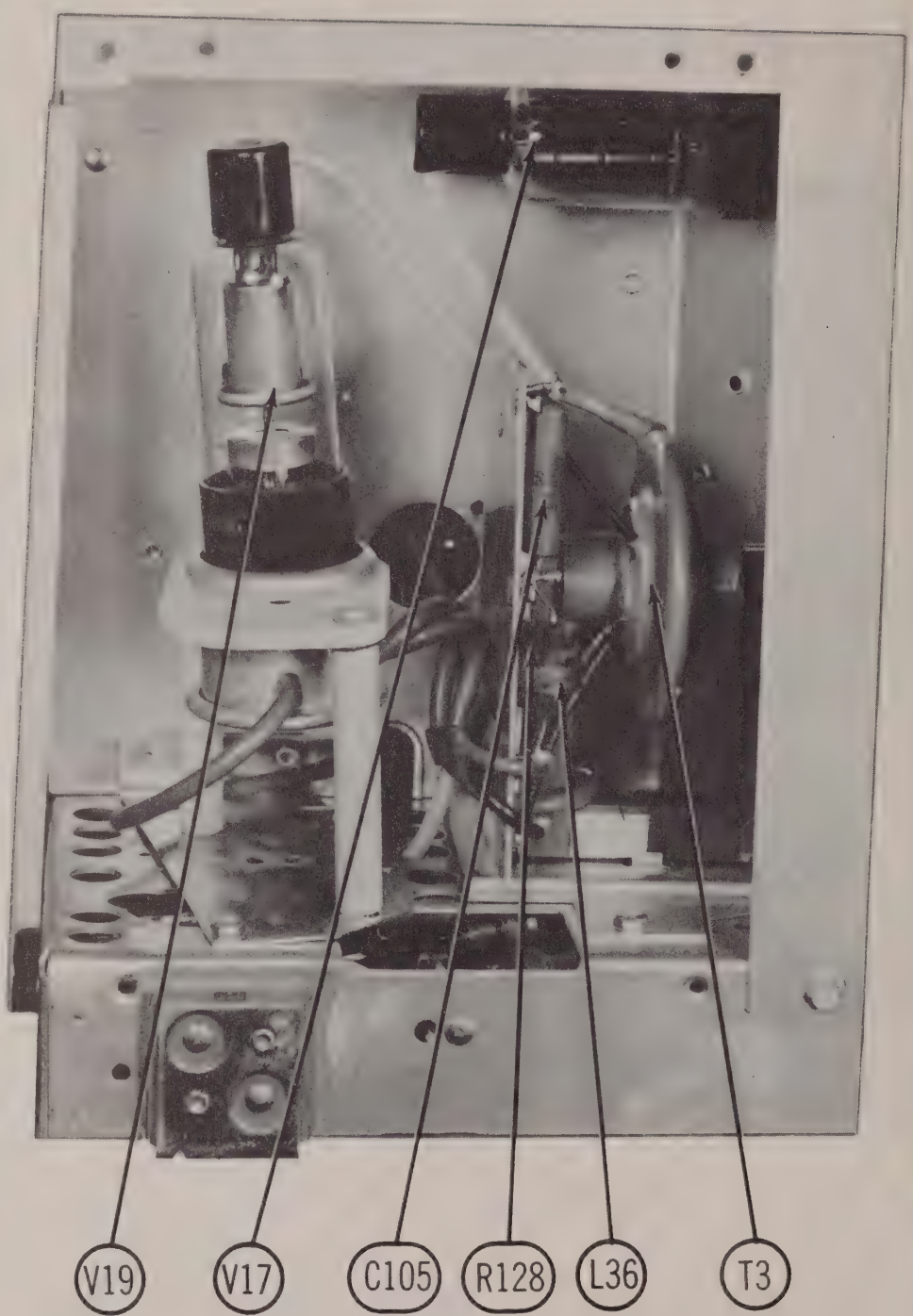
CENTERING

Centering is accomplished by mechanical means. Loosen wing nut at top of PM Focusing Assembly and adjust centering lever for proper centering of picture.

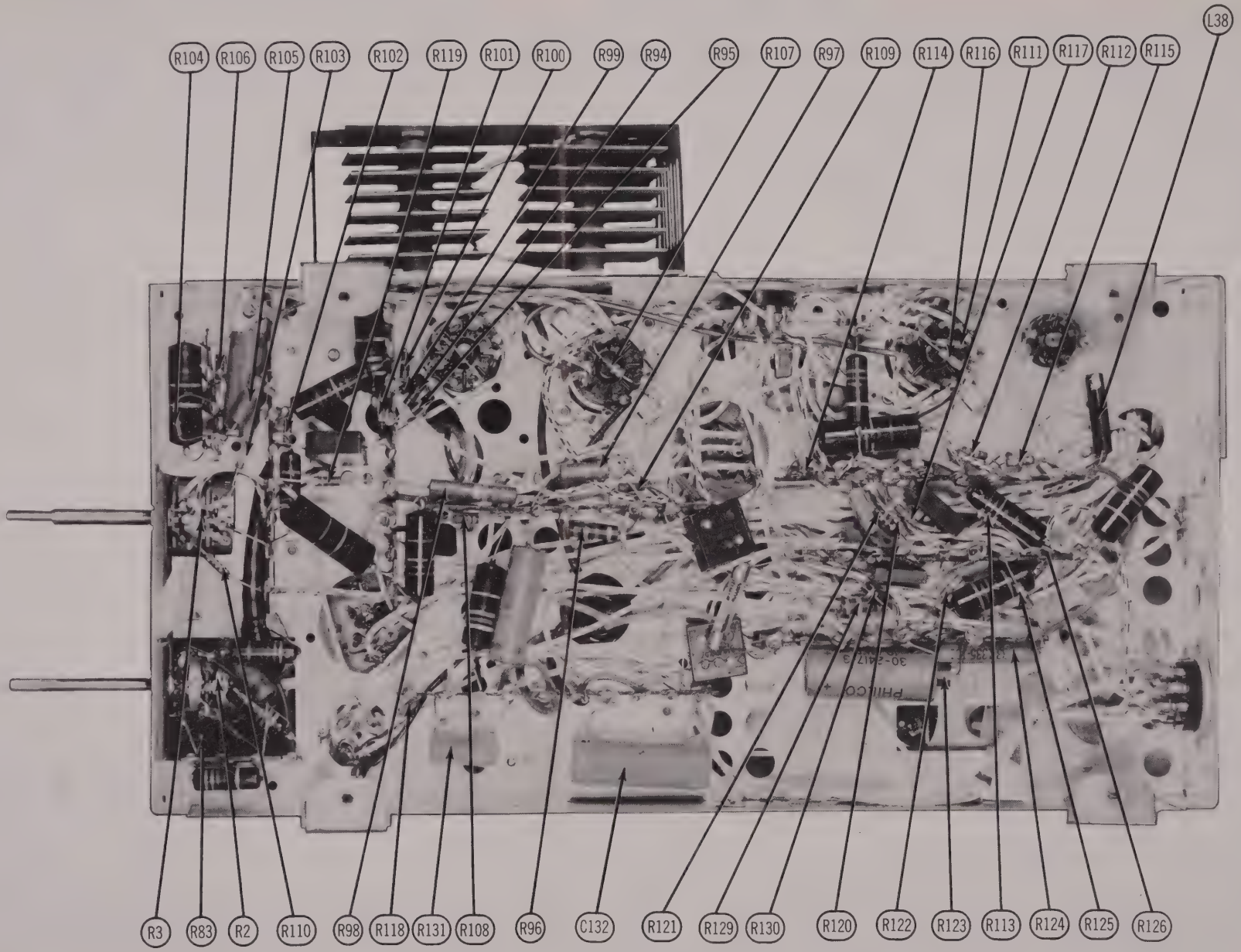
DISASSEMBLY INSTRUCTIONS

1. Remove 10 push on type control knobs from front panel.
2. Disconnect built in antenna & tuner input lead from rear cover.
3. Remove 20 wood screws. Disconnect fringe area plug from RF chassis. Remove rear cover.
4. Disconnect vol. cont. plug fron TV-Phono sw. socket, Vol. Cont. plug from RF-IF chassis, Phono-Motor plug, Phono input, Radio-Phono inter-connecting cable, TV inter-connecting chassis cable, deflection yoke cable, HV lead, CRT socket, ground strap from yoke bracket, and speaker plug.
5. Remove 2 wood screws and remove bracket holding audio output decoupling resistor.
6. Remove 4 speaker nuts. Remove speaker.
7. Remove 3 nuts holding TV-Phono switch bracket. Remove bracket.
8. Remove 8 chassis bolts. Remove RF-IF chassis and sweep chassis.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.



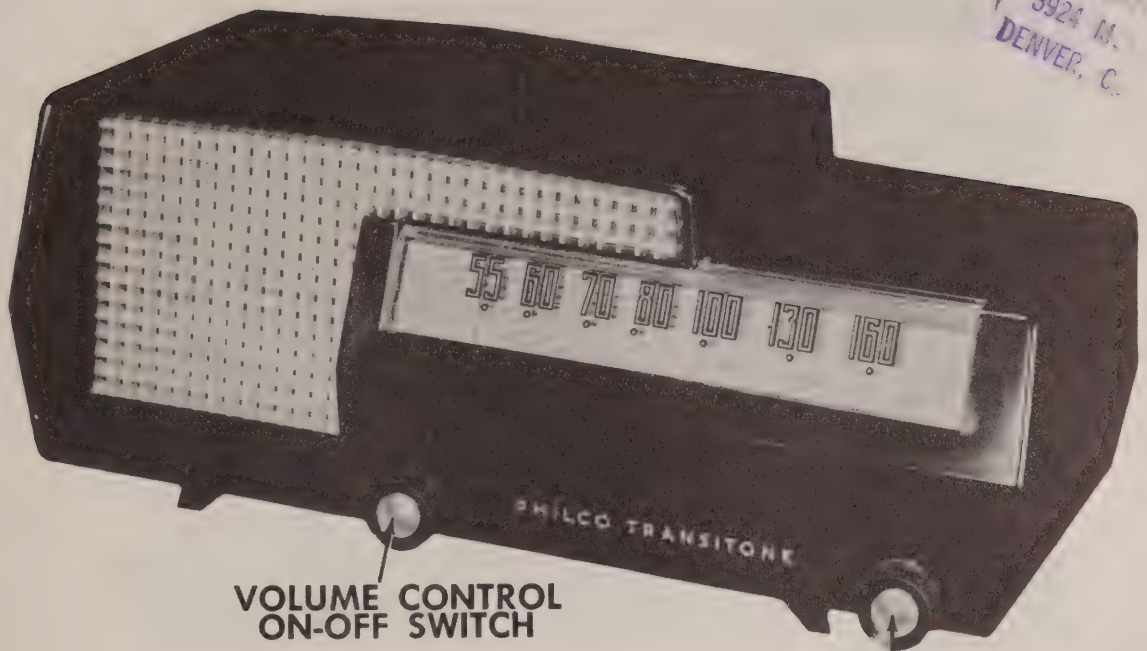
HIGH VOLTAGE COMPARTMENT



SWEEP CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PRO...
L. F. BL...
3924 M...
DENVER, C...

PHILCO
MODEL 53-563



PHILCO
MODEL 53-563

TRADE NAME	Philco Model 53-563
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.
TYPE SET	AC-DC Operated 2 Band AM Superheterodyne Receiver
TUBES (Five)	Types 12BE6 Conv., 12AB6 IF Amp., 12AV6 Det.-AVC-AF Amp., 35C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	105-120 Volts AC/DC
RATING	.23 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620 KC
SPECIAL SERVICES	1700-3400 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC	Broad-cast	Tuning gang fully open	Across voice coil	A1, A2 A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620 KC	"	Fully open tuning gang, insert a .006" non-metallic shim between the head of rotor and top of stator plates. Close gang to just touching shim and remove shim.	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1500 KC	"	1500 KC	"	A6	"
4.		"	3200 KC	Special Services	3200 KC	"	A7	"

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PARTS LIST AND DESCRIPTIONS

PHILCO
MODEL 53-563

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		PHILCO PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AVC-AF Amp.	12AV6	12AV6	7BT	
V4	Audio Output	35C5	35C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	30	150	30-2573	PRS150/30-30-30		BBRT32V-215		3N534	TVA-3444	Orange
B	25	150								Red
C	20	150								Blue
C2	944	500	30-1220-65							
C3	47		30-1230-4	SI47	D6-470	5R5Q5	GP1K-470	UC-5447	5GA-Q47	
C4	7.5		30-1224-83							
C5	.05	200	45-3505-28	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C6	.05	200	45-3505-28	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C7	220	500		1468-00025	D6-221	5W5T25	GP2K-221	MC240	1FM-325	Note 1
C8	5000		30-1238-1	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C9A	.005		♦30-6001		♦PC-70		♦1406-01		♦104C4	
B	250									
C										
C10	.022	400	45-3505-43	P488-022	DF-203	PTE4P22		PT4122	4TM-S22	
C11	.047	400	45-3505-62	489ZXP-05		PJ4147		PT4147	4TM-S47	
C12	.1	400	45-3505-47	P488-1		PTE4P1		PT401	4TM-P1	

Note 1. Not used in all Models.
♦ Items C9A, C9B, C9C, R7A, R7B are combined in one unit.
When replacing with separate items, C9B and C9C should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	33-5566-41	QI3-133	AG-60-Z	B-60-S	U-48	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PHILCO PART No.	IRC PART No.	
R2	22KΩ	½	66-3228340	BTS-22K	
R3	4700Ω	½	66-2478340	BTS-4700	
R4	2.2Meg	½	66-5228340	BTS-2.2Meg	
R5	47KΩ	½	66-3478340	BTS-47K	
R6	10 Meg	½	66-6108340	BTS-10 Meg	

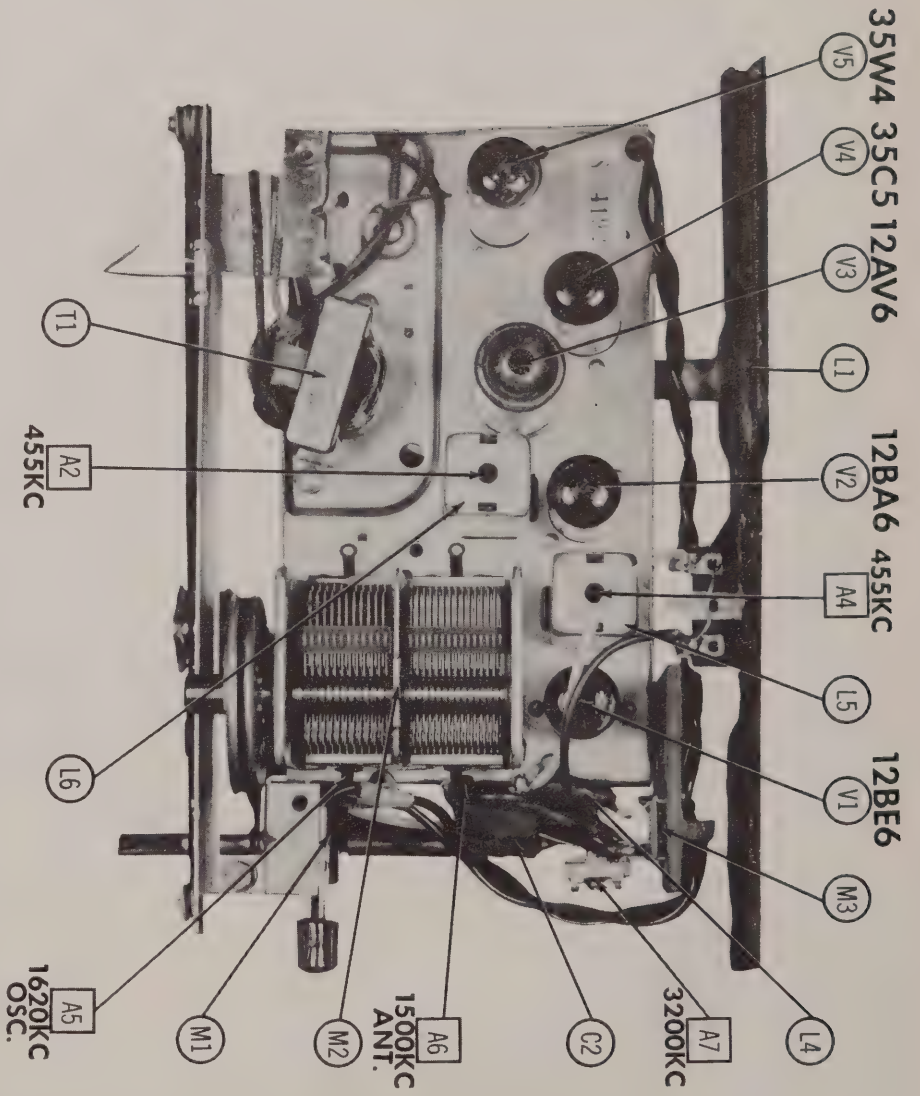
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PHILCO PART No.	IRC PART No.	
R7A	500KΩ	½	♦ 30-6001		
B	500KΩ	½			
R8	150Ω	½	66-1158340	BTS-150	
R9	220Ω	1	66-1224340	BTA-220	
R10	1000Ω	½	66-2108340	BTS-100	
R11	*	*	33-1343-3		

* Special resistor 880Ω Cold, 100Ω Hot.
♦ Items R7A, R7B, C9A, C9B, C9C are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.5KΩ	3.3Ω	216Ω	.84Ω	32-8384-4 32-8384 ①	A-3332	A-3025	RO-2 ②	S-2X ②	① Alternate audio output. ② Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	PHILCO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.3Ω	36-1627-5	ST-113 Mod. P4-X	4A1	

COILS (RF-IF)

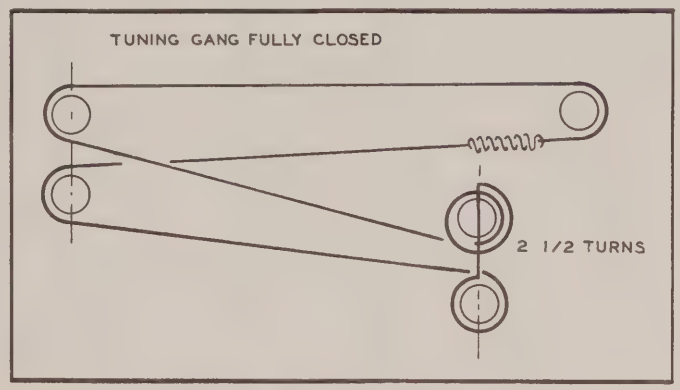
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	PHILCO PART No.	MERIT PART No.	
L1	Loop Ant.	3Ω		76-7764		
L2	Sw. Ant. Coil	1Ω		32-4561-3		
L3	BC Osc. Coil	.9Ω	7Ω	32-4453-6		
L4	Sw. Osc. Coil	3Ω		32-4562-2		
L5	Input IF	15Ω	15Ω	32-4161A	BC-352	
L6	Output IF	15Ω	15Ω	32-4240A	BC-355	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					PHILCO PART No.		
M1	Bayonet	6-8	.15	Brown	34-2068		Type No. 47

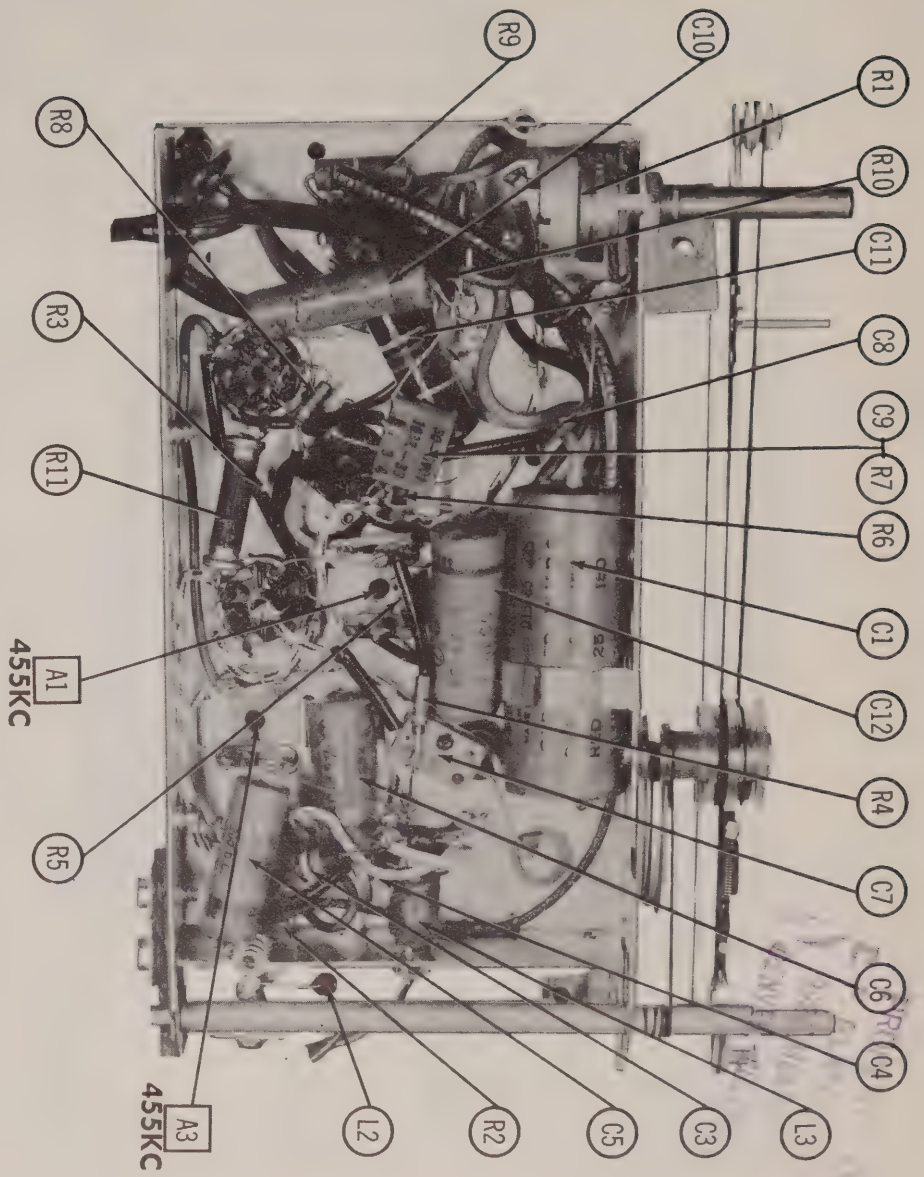
MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M2	Tuning Capacitor	31-2751-14	14-483MMF, 9-170MMF
M3	Switch	42-1796-2	Band Switch, DPDT Slide
A7	Trimmer Capacitor	31-6473-29	Special Services, Ant. Adj.
	Cabinet	10918-1	Ebony
	Cabinet	10918-3	Swedish Red
	Back & Loop Assy.	76-7746	
	Grille	54-4946	
	Dial Backplate	54-4968	
	Knob	54-4527-37	Ebony (2 Used)
	Knob	54-4527-38	Red (2 Used)
	Pointer	56-8774-3	

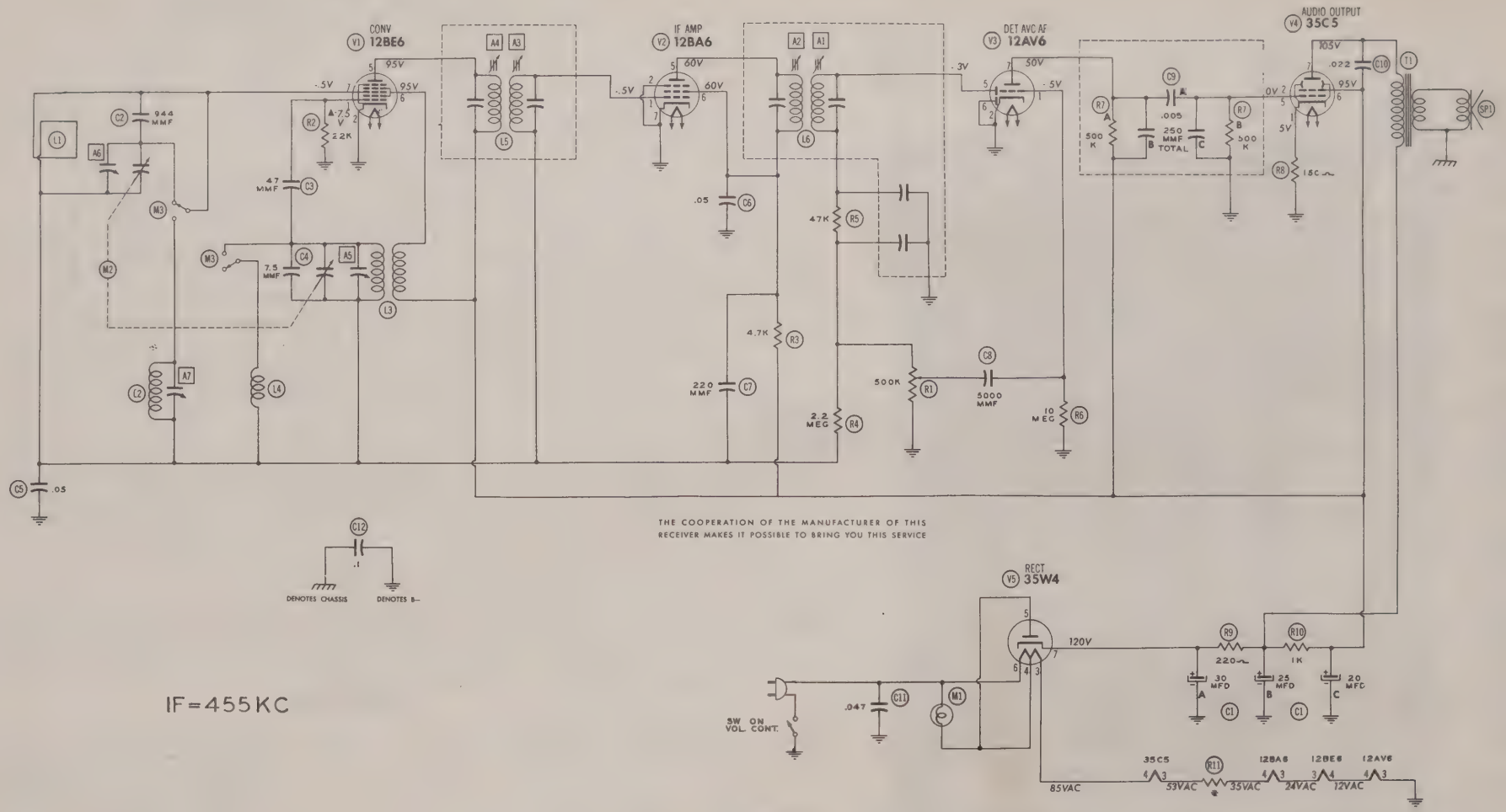


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



PHILCO MODEL 53-563



IF=455KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	0Ω	24Ω	12Ω	†1.2KΩ	†1.2KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	24Ω	36Ω	†5.9KΩ	†5.9KΩ	0Ω
V 3	12AV6	10 Meg	0Ω	0Ω	12Ω	547KΩ	0Ω	†500KΩ
V 4	35C5	†50Ω	500KΩ	880Ω	910Ω	500KΩ	†1.2KΩ	†450Ω
V 5	35W4	†220Ω	†220Ω	910Ω	940Ω	936Ω	936Ω	120KΩ

* TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5

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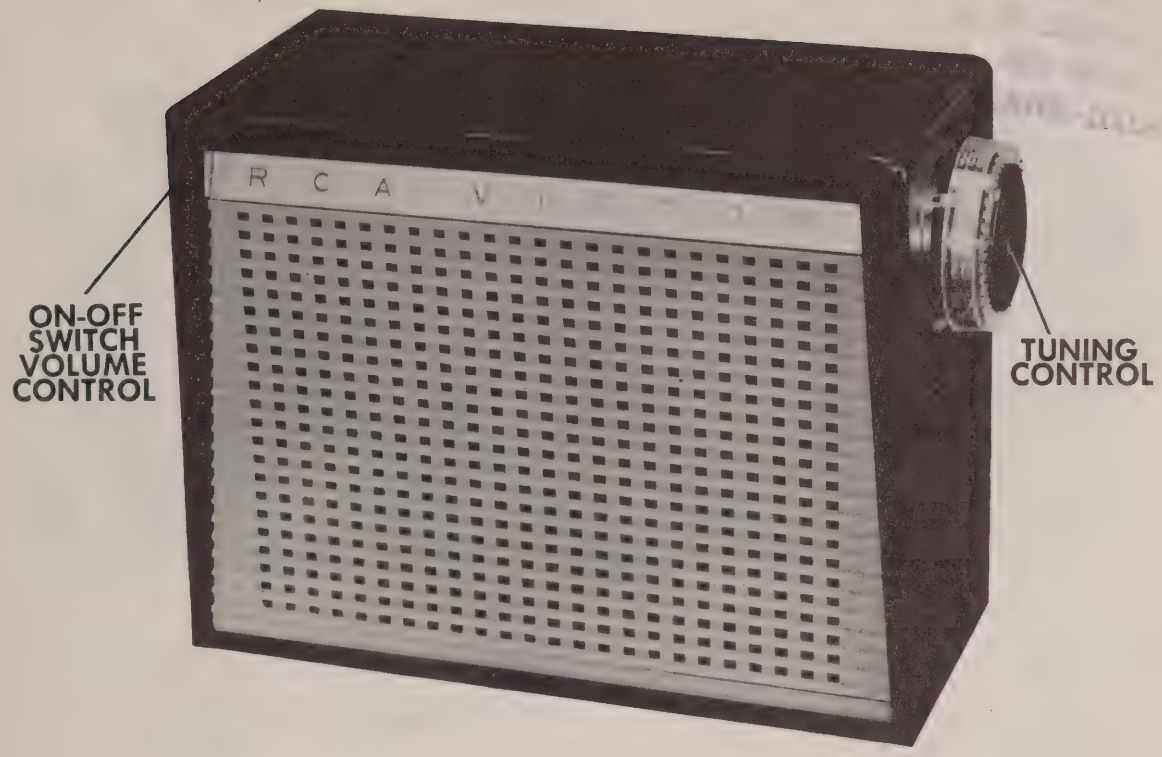
196-12

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RCA VICTOR
MODEL 2-R-51, 2-R-52 (Ch. RC1119)



RCA VICTOR
MODEL 2-R-51, 2-R-52 (Ch. RC1119)

TRADE NAME	RCA Victor , Models 2-R-51, 2-R-52 (Ch. RC1119)
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, N.J.
TYPE SET	AC Operated AM Superheterodyne Receiver
TUBES (Four)	Types 12BE6 Conv., 6BJ6 IF Amp., 12AV6 Det.-AVC-AF Amp., 6AK6 Audio Output
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING .14 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to stator of antenna section of tuning gang. Low side to chassis.	455KC (400~Mod)	Quiet point near 1600 KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620 KC	Tuning gang fully open	"	A5	"
3.		Loop	1400 KC	Tune to 1400KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.	Repeat steps 2 and 3 for optimum results.						

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA Victor PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	6BJ6	6BJ6	7CM	
V3	Det.-AVC-AF Amp.	12AV6	12AV6	7BT	
V4	Audio Output	6AK6	6AK6	7BK	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	■50	150	77443	AFH2-15		BO15				
B	▲30	150								
C2	3.9									Note 1
C3	47		75609	SI47	D6-470		GP1K-470	UC-5447	5GA-Q47	
C4	.047	400	77422	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C5	120		76347	SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C6	.027	200	77448							
C7	.01	200	77424	P285-01	D6-103	TM5S1	GP2-333-103	DC-511	4TM-S1	
C8	220		75611	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C9	.0022	400	77446	P485-0022	D6-222		GP2-333-222	UC-5222	6TM-D22	
C10	.0033	400	77447	P485-0033	D6-332		GP2-333-332	UC-5233	5HK-D33	
C11	.047	400	75071	489ZX-05		PJ4S47		PT4147	4TM-S47	
C12	.1	400	77423	P488-1	DF-104	PTE4P1		PT401	4TM-P1	

Note 1. Some Models use 4.7MMF in this application (Part #77471)

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA VICTOR PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	77442	Q13-133X	AT-78	BT-66-S	UT-427	Volume Tap@ 100KΩ
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SW-A	Not Req.	US-26	Attach to R1A

RESISTORS

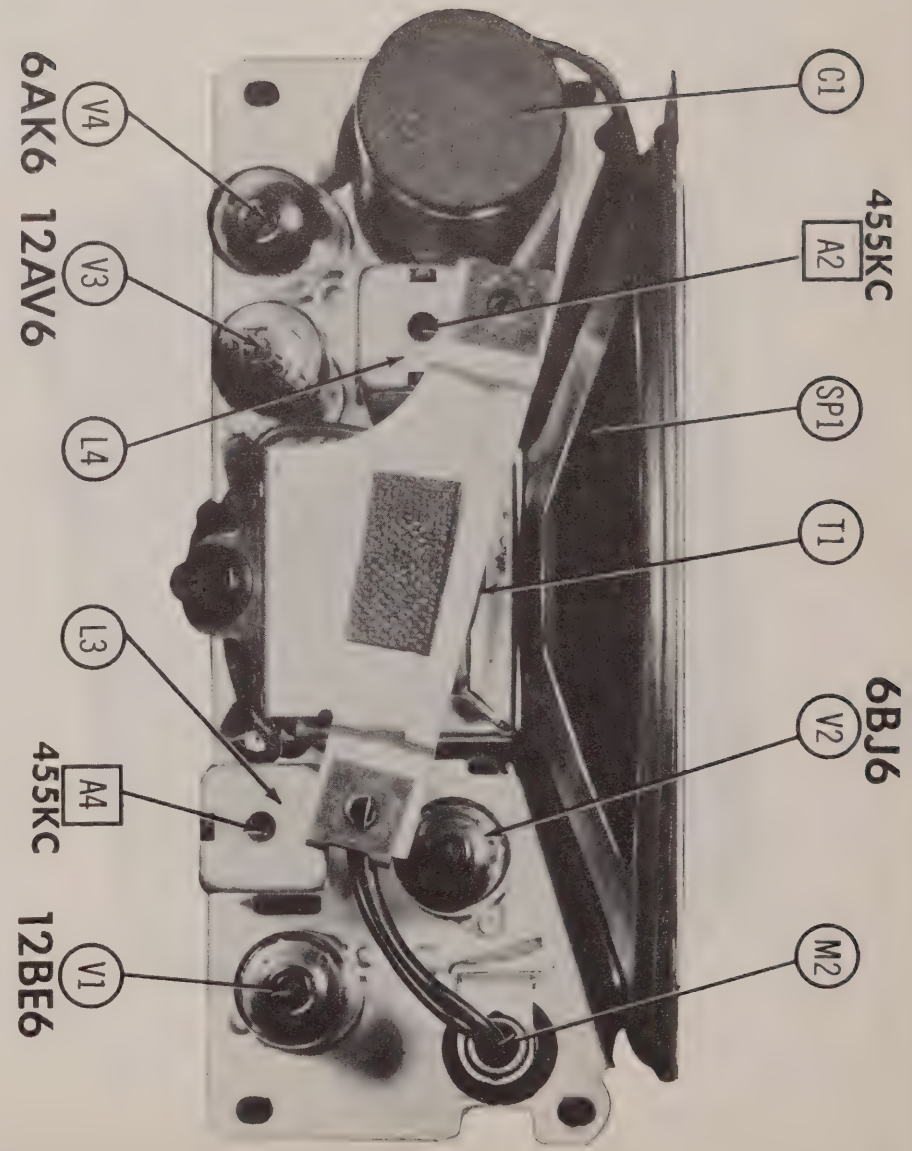
ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: RCA VICTOR PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	33KΩ	½	503333	BTS-33K	
R3	100Ω	½	503110		
R4	3.3Meg	½	503533	BTS-3.3Meg	
R5	47KΩ	½	503347	BTS -47K	
R6	6800Ω	½	503268	BTS-6800	
R7	4.7Meg	½	505547	BTS-4.7Meg	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: RCA VICTOR PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R8	330KΩ	½	503433	BTS-330K	
R9	820KΩ	½	503482	BTS-820K	
R10	470Ω	½	503147	BTS-470	
R11	1500Ω	2	523215	BTB-1500	
R12	22Ω	½	77571	-	

TRANSFORMER (FILAMENT)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: RCA Victor PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .05A tap @ 37VAC @ .15A @ 6VAC @ .15A				77441				

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		RCA Victor PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	9.7KΩ	3.2Ω	625Ω	.38Ω	74445	A-3879 ①	A-2932 ①	RO-16 ①	S-11X ①	① Bend mounting tabs down, file out slots, mount on original mounting brackets.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	RCA Victor PART No.	VIKING PART No.	QUAM PART No.	
SP1	4"x6"	PM	3.2Ω	77451	46J6	46A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	RCA Victor PART No.	MERIT PART No.	
L1	Loop Ant.	.6Ω		77438		
L2	Osc. Coil	1Ω	8Ω	77450		
L3	Input IF	18Ω	18Ω	77416	BC-352	
L4	Output IF	7Ω	7Ω	77417	BC-355	

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA					
	CURRENT	RCA Victor PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.028	77292		8J1	2124B	6S35	35

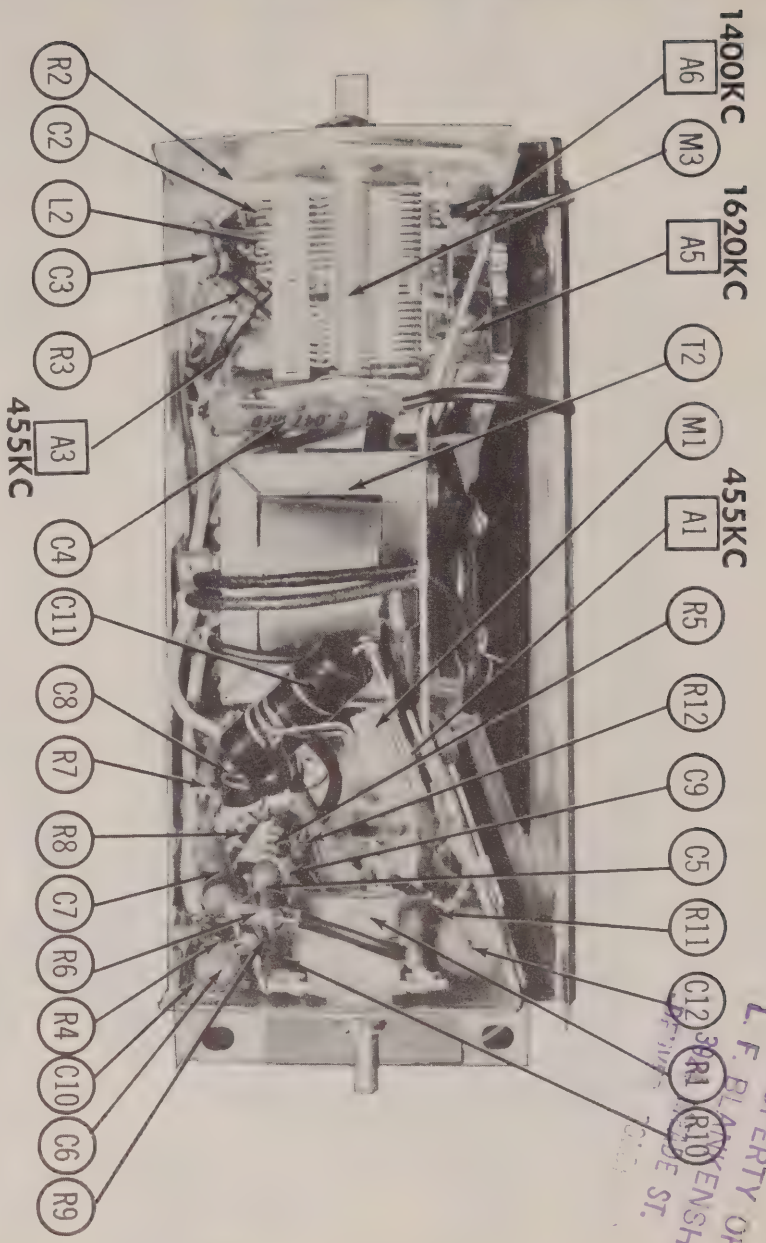
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					RCA Victor PART No.		
M2	Bayonet	7.5	.2	White	11765		Type #51

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M3	Tuning Capacitor	77440	22-298MMF, 28-168MMF
	Cabinet	77457	Black & Beige (Model 2R51)
	Cabinet	77465	Tan & Ivory (Model 2R52)
	Bottom Cover	77458	Beige (Model 2R51)
	Bottom Cover	77466	Ivory (Model 2R52)
	Knob	77453	Tuning (Model 2R51)
	Knob	77464	Tuning (Model 2R52)
	Knob	77452	Off/On Volume (Model 2R51)
	Knob	77463	Off/On Volume (Model 2R52)

CHASSIS—BOTTOM VIEW



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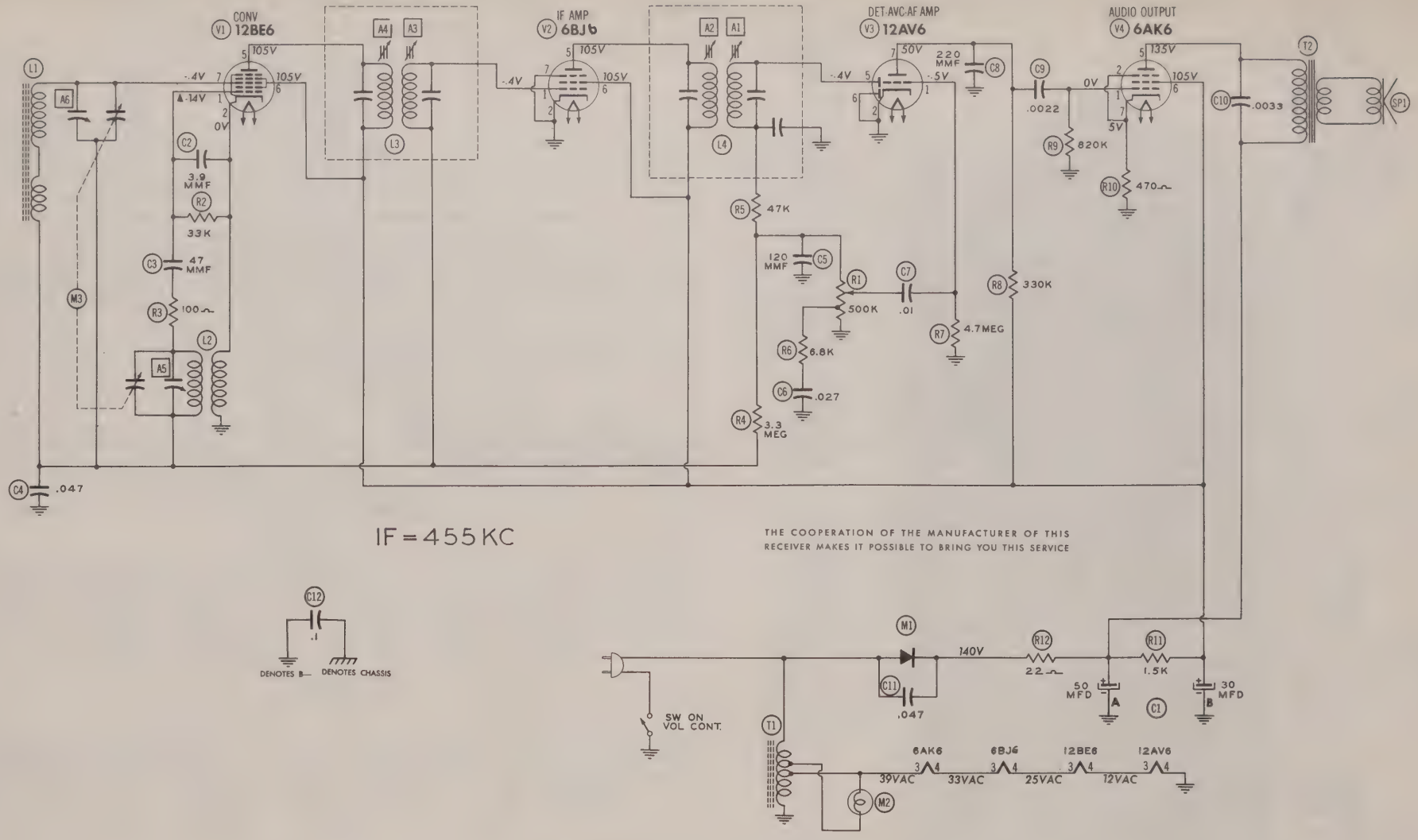
RCA VICTOR
MODEL 2-R-51 (Ch. RC1119)



IF = 455 KC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	33KΩ	1Ω	19Ω	12Ω	†1.5KΩ	†1.5KΩ	3.8Meg
V 2	6BJ6	3.8Meg	0Ω	23Ω	19Ω	†1.5KΩ	†1.5KΩ	0Ω
V 3	12AV6	4.7Meg	0Ω	12Ω	0Ω	550KΩ	0Ω	†330KΩ
V 4	6AK6	820KΩ	470Ω	25Ω	23Ω	†650Ω	†1.5KΩ	470Ω

† MEASURED FROM OUTPUT OF M1
▲ TAKEN WITH VACUUM TUBE VOLTMETER

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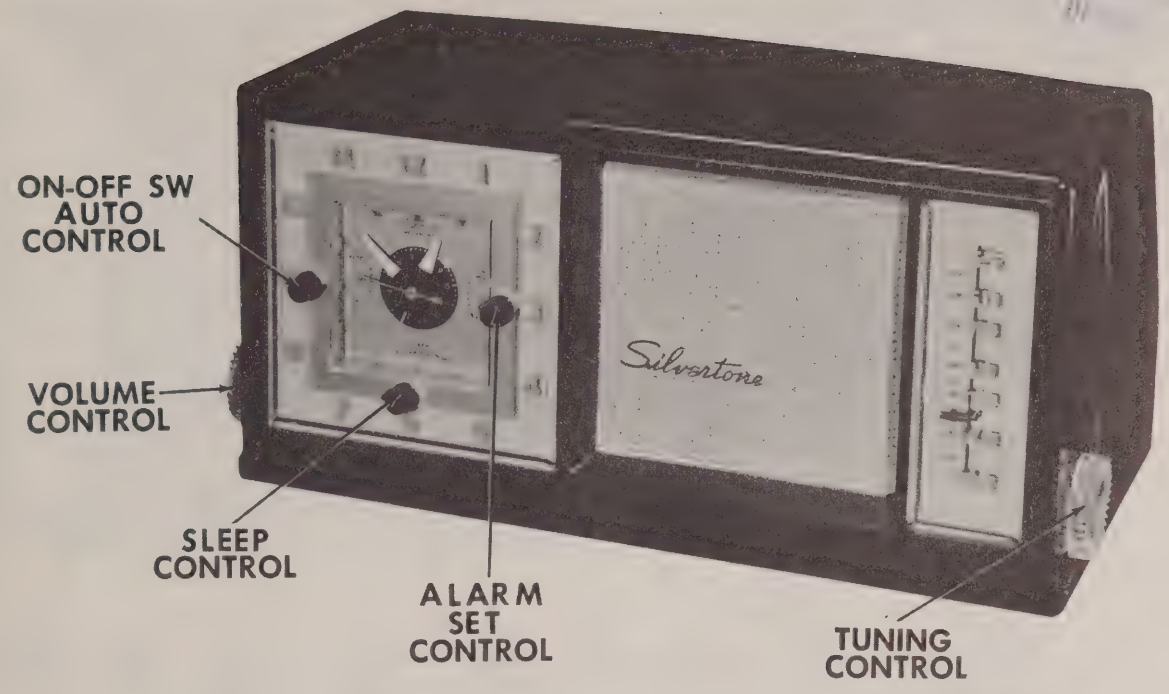
196-13

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE MODELS 2009, 2010, 2011, 2012, 2013 (Ch. 132.022)



SILVERTONE MODELS 2009, 2010, 2011, 2012, 2013 (Ch. 132.022)

TRADE NAME	Silvertone Model 2009, 2010, 2011, 2012, 2013 (Ch. 132.022)
SUPPLIER	Sears, Roebuck & Co., 925 So. Homan, Chicago, Ill.
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (Six)	Types 6BJ6 RF Amp., 12BE6 Conv., 6BJ6 IF Amp., 12AV6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	105-120 Volts AC - 60 Cycle — RATING .27 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set upper edge of pointer saddle 3/16" from upper end of saddle bar. Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator plates of middle section of tuning gang. Low side to B-.	455KC (400\Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFd to reduce hum modulation.
2.	"	"	1620KC	"	"	A5	"
3.		Loop	1400 KC	Tune to 1400KC signal	"	A6, A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

SILVERTONE
MODEL 2009 (Ch. 132.002)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		Silvertone PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BJ6	6BJ6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3	IF Amplifier	6BJ6	6BJ6	7BK	
V4	Det.-AVC-AF Amp.	12AV6	12AV6	7BT	
V5	Audio Output	50C5	50C5	7CV	
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	Silvertone PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	80	150	N25984	PRS150/80-40-20		EDL8415		3N538	TVA-3455	Red Blue
B	50	150								
C2	.047	200		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C3	220	500		1469-00025		5R5T25				
C4	2.2				TCZ-2.2		NP0K-2R2		5TCCB-V22	
C5	.01	200		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C6	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C7	220	500		1468-00022	D6-221	5W5T25	GP2K-221		1FM-325	
C8	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C9A	.005		♦N25264		♦PC-70		♦1406-01		♦104C4	
B	250									
C										
C10	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C11	.047	400		489ZX-05		PJ4S47		PT4147	4TM-S47	
C12	.047	400		P488-047		PJ4S47		PT4147	4TM-S47	

♦ Items C9A, C9B, C9C, R7A, R7B are combined in one unit.
When replacing items separately, C9B and C9C should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Silvertone PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1Meg	½	N25943	Q13-137	AG-63-Z	R-70	U-53	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Silvertone PART No.	IRC PART No.	
R2	22KΩ	½		BTS-22K	
R3	100KΩ	½		BTS-100K	
R4	2.2Meg	½		BTS-2.2Meg	
R5	22KΩ	½		BTS-22K	
R6	6.8Meg	½		BTS-6.8Meg	
R7A	500KΩ	½	♦N25264		
B	500KΩ	½			

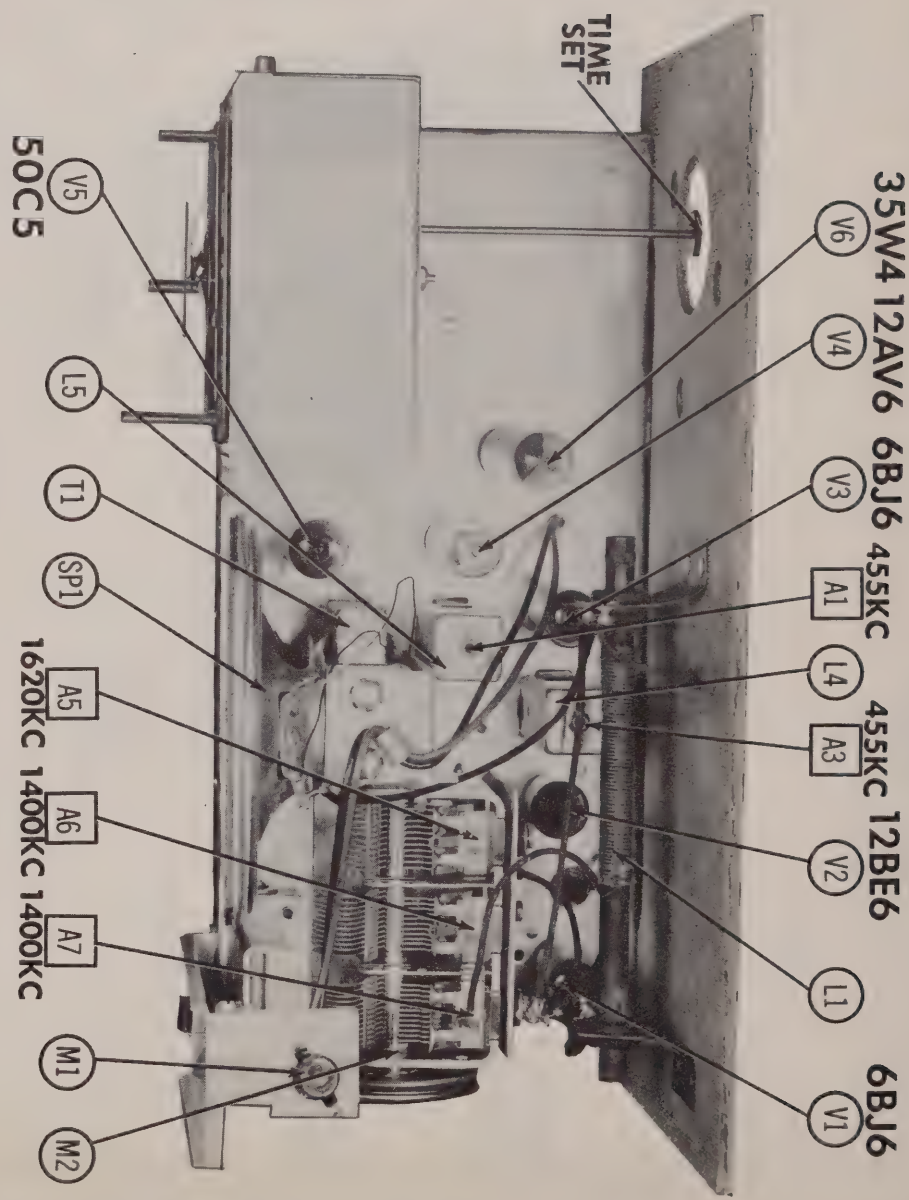
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Silvertone PART No.	IRC PART No.	
R8	120Ω	½		BTS-120	
R9	1200Ω	1		BTA-1200	
R10	10Ω	½			
R11	150Ω	½		BTS-150	
R12	330KΩ	½		BTS-330K	
R13	68Ω	½			Note

♦ Items R7A, R7B, C9A, C9B, C9C are combined in one unit.
Note: Not used in all Models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.2KΩ	3.4Ω	84Ω	.38Ω	N25975-1	A-3876	A-2928	RO-2	S-2X	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	Silvertone PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.4Ω	C-25756	ST-105 Mod. P5-X	5A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Silvertone PART No.	MERIT PART No.	
L1	Loop Ant.	0Ω	.4Ω	N25942-1		Includes back cover
L2	RF Coil	35Ω	8Ω	N25997-1	BC-382 *	
L3	Osc. Coil	.6Ω	6.7Ω	N25996-1		
L4	Input IF	21Ω	21Ω	N21797-16	BC-352	
L5	Output IF	21Ω	21Ω	N21797-16	BC-353	

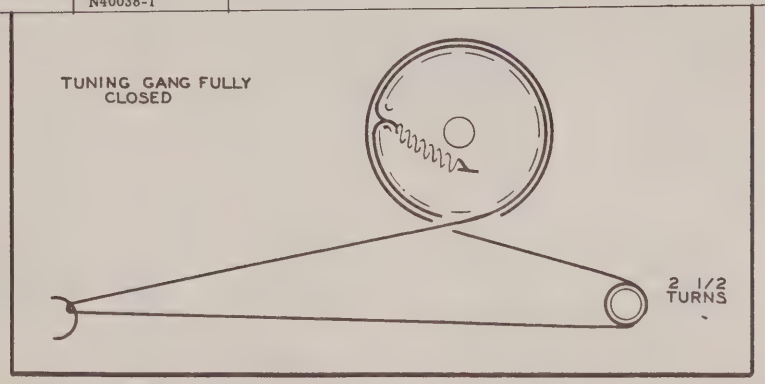
* Drill mounting hole.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Silvertone PART No.		
M1	Bayonet	6-8	.15	Brown			Type #47

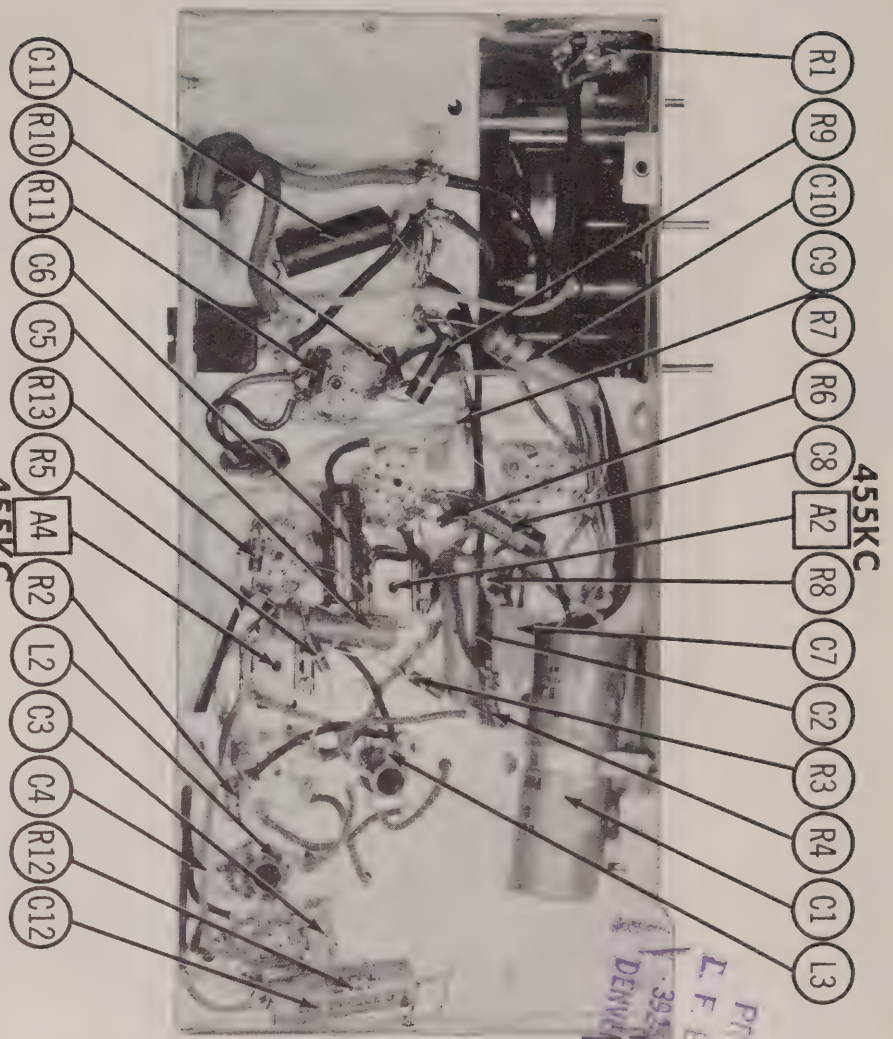
MISCELLANEOUS

ITEM No.	PART NAME	Silvertone PART No.	NOTES
M2	Tuning Capacitor	N25944	30-423MMF, 24-388MMF, 22-166MMF
	Cabinet Assy.	N40418-1	Green, Model 2009
	Cabinet Assy.	N40419-1	Red, Model 2010
	Cabinet Assy.	N40420-1	Yellow, Model 2011
	Cabinet Assy.	N40421-1	Brown, Model 2012
	Cabinet Assy.	N40422-1	Ivory, Model 2013
	Dial Scale	N25962	
	Pointer Assy.	N25941-1	
	Knob	N25929	Radio, 2 used
	Knob	N25233-1	Clock, Ivory, 3 used
	Knob	N25235-2	Clock, Brown, 3 used
	Clock Crystal	N25961	
	Clock	N40038-1	



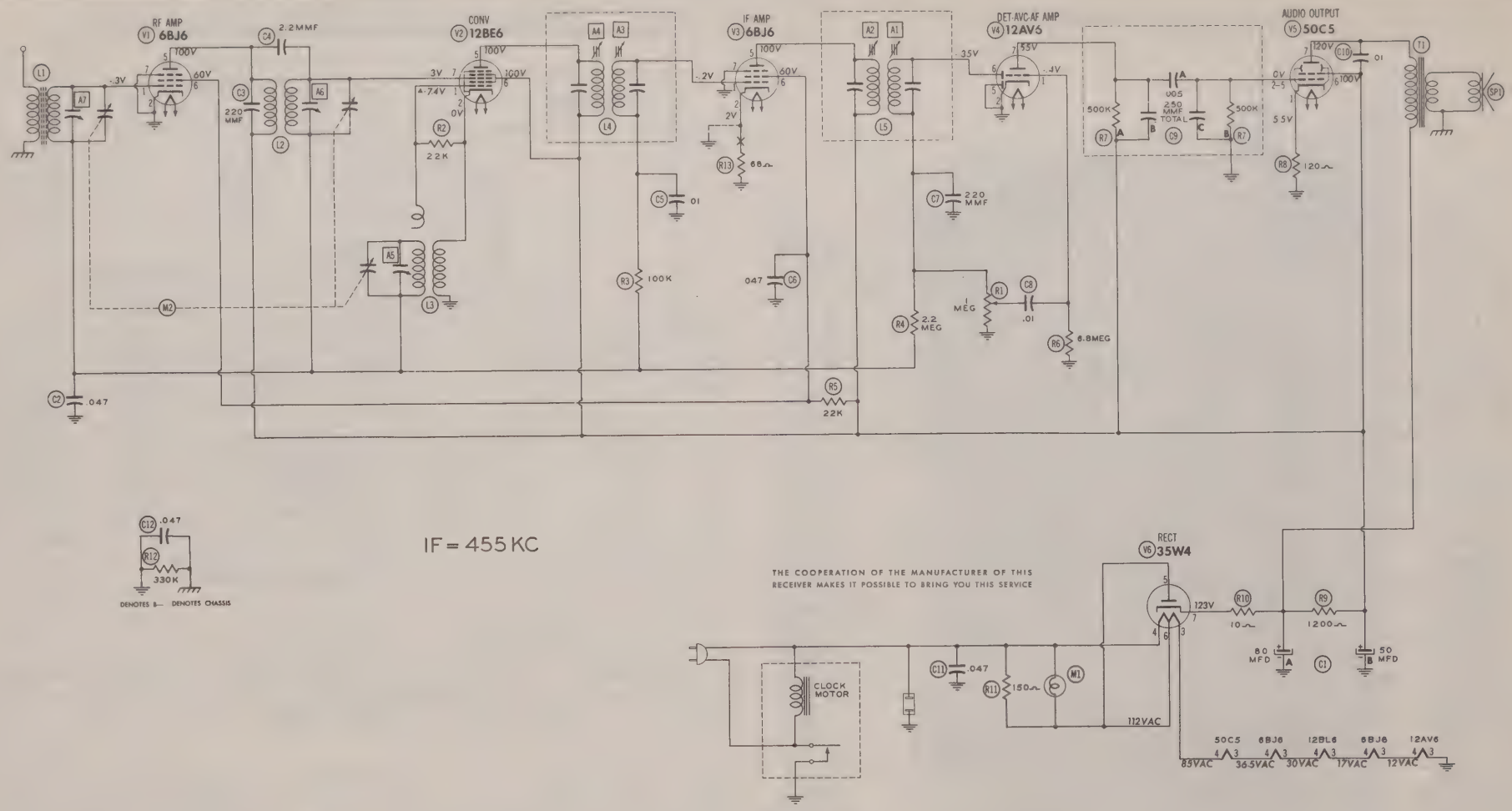
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



SILVERTONE MODEL 2009 (Ch. 132.002)

SILVERTONE MODEL 2009 (Ch. 132.002)



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BJ6	3.2Meg	0Ω	30Ω	36Ω	†1.2KΩ	†23KΩ	0Ω
V 2	12BE6	22KΩ	.6Ω	18Ω	30Ω	†1.2KΩ	†1.2KΩ	3.2Meg
V 3	6BJ6	3.3Meg	68Ω	12Ω	18Ω	†1.2KΩ	†23KΩ	0Ω
V 4	12AV6	6.8Meg	0Ω	0Ω	12Ω	0Ω	1Meg	†500KΩ
V 5	50C5	120Ω	500KΩ	36Ω	78Ω	500KΩ	†1.2KΩ	†94Ω
V 6	35W4	†10Ω	INF	78Ω	100Ω	97Ω	97Ω	2.5Meg

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V6.

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196–14

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE MODELS
2014, 2015, 2016 (Ch. 132.021)

SILVERTONE MODELS
2014, 2015, 2016 (Ch. 132.021)

TRADE NAME	Silvertone Models 2014, 2015, 2016 (Ch. 132.021)
MANUFACTURER	Sears Roebuck & Co., 925 So. Homan St., Chicago, Ill.
TYPE SET	AC-DC Operated AM Superheterodyne Receiver
TUBES (Six)	Types 12SK7 RF Amp., 12SA7 Conv., 12SK7 IF Amp., 12SQ7 Det.-AVC-AF Amp., 35L6GT Audio Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC/DC — RATING .26 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Turn tuning gang fully closed and set pointer horizontally at low frequency end of dial.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to pin 8 (grid) of 12SA7 (V2). Low side to B-.	455KC (400~Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	50MMF	High side to external antenna connection. Low side to B-.	1400 KC	1400 KC	"	A5, A6, A7	Adjust in order given for maximum output.

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PARTS LIST AND DESCRIPTIONS

SILVERTONE
MODEL 2014 (Ch. 132.021)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		Silvertone PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	12SK7	12SK7	8N	
V2	Converter	12SA7	12SA7	8R	
V3	IF Amplifier	12SK7	12SK7	8N	
V4	Det.-AVC-AF Amp.	12SQ7	12SQ7	8Q	
V5	Audio Output	35L6GT	35L6GT	7S	
V6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	Silvertone PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	80	150	N24249	PRS150/80-		BRD8415		3N538	TVA-3455	Red
B	50	150		40-20						Blue
C2	.05	200		P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3	50	500		1468-00005	D6-500	5W5Q5	GP1K-500	MC225	1FM-45	
C4	220			SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
C5	.001	600		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C6	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C7	220			SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
C8	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C9	.0027	600		P688-003	D6-302	PTE6D3	GP2-333-302	PT623	6TM-D3	
C10	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C11	.05	400		P488-05		PTE4S5		PT415	4TM-S5	
C12	.05	400		P488-05		PTE4S5		PT415	4TM-S5	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Silvertone PART No.	IRC PART No.	CLAROSTAT PART No	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	N25699	Q13-133X	AK-82	BTSK-67-S	UT-430	Volume-Tapped @ 150KΩ
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A
R2A	500KΩ	½	N25700	Q13-133	AG-60-Z	BSK-60	U-48	Tone
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R2A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Silvertone PART No.	IRC PART No.	
R3	2200Ω	½		BTS-2200	Note
R4	22KΩ	½		BTS-22K	
R5	6.8Meg	½		BTS-6.8Meg	
R6	68Ω	½			
R7	1Meg	½		BTS-1Meg	
R8	33KΩ	½		BTS-33K	
R9	3.3Meg	½		BTS-3.3Meg	

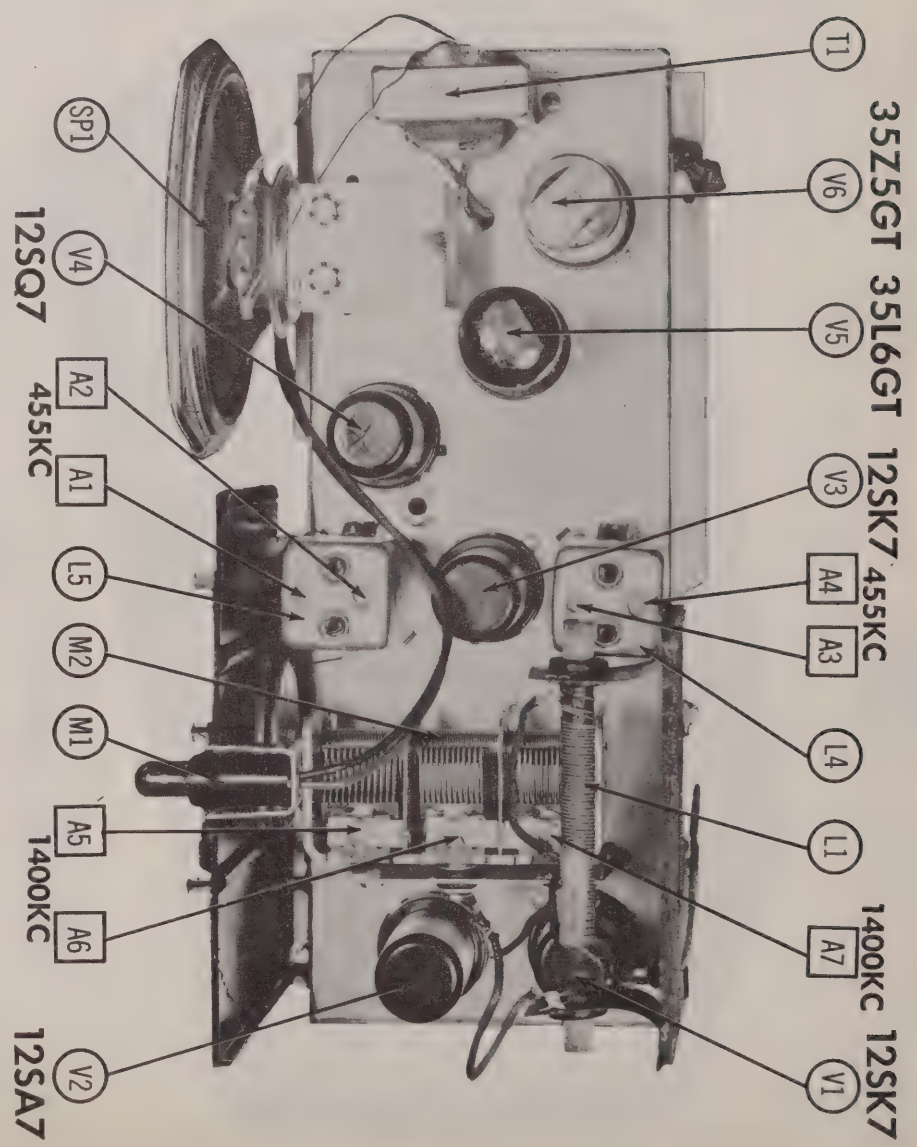
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Silvertone PART No.	IRC PART No.	
R10	330KΩ	½		BTS-330K	
R11	150Ω	½		BTS-150	
R12	1000Ω	2		BTB-1000	
R13	15Ω	½			
R14	150Ω	½		BTS-150	
R15	330KΩ	½		BTS-330K	

Note: Some Models use a 1000Ω resistor in this application.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	3.2KΩ	3.2Ω	107Ω	.44Ω	N-23164-1	A-3925 ①	A-3018 ①	RO-302	S-1X	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	Silvertone PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.4Ω	C-25756	ST-105 Mod. P5-X	5A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Silvertone PART No.	MERIT PART No.	
L1	Loop Ant.	0Ω	.4Ω	N25657-1		
L2	RF Coil	2.1Ω	7.5Ω	N25706-1	BC-382 *	
L3	Osc. Coil	.8Ω	6.5Ω	N23751-1	BC-397 *	
L4	Input IF	17.5Ω	17Ω	N25728-1	BC-308 *	
L5	Output IF	17.5Ω	17Ω	N25729-1	BC-311 *	

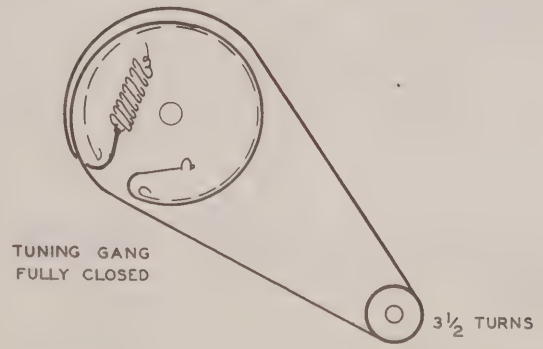
* Drill one new mounting hole.

DIAL LIGHTS

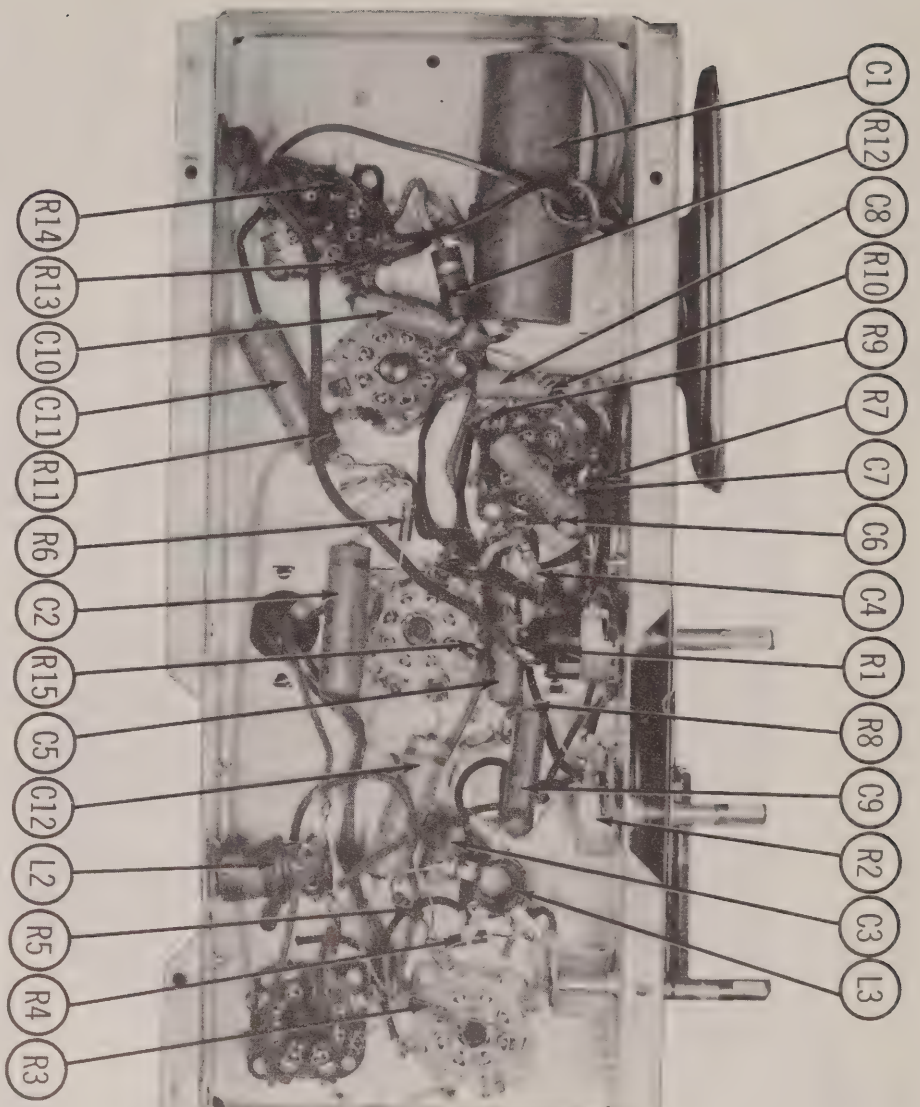
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Silvertone PART No.		
M1	Bayonet	6-8	.15	Brown			Type #47

MISCELLANEOUS

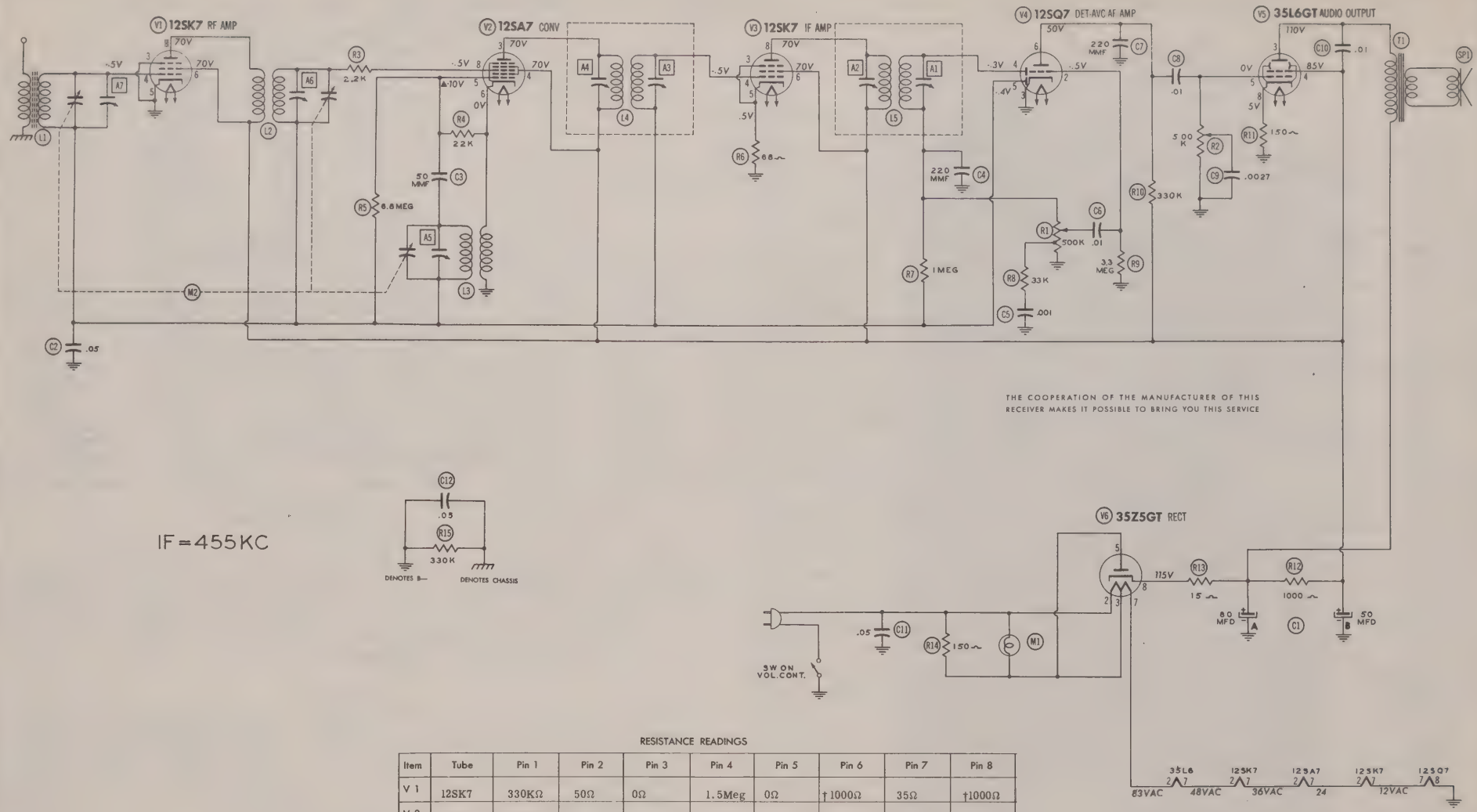
ITEM No.	PART NAME	Silvertone PART No.	NOTES
M2	Tuning Capacitor	N25658	32-418MMF, 24-383MMF, 20-188MMF
	Cabinet Assy.	N25722-1	Green, Model 2014
	Cabinet Assy.	N25720-1	Brown, Model 2015
	Cabinet Assy.	N25721-1	Ivory, Model 2016
	Back	N25635	
	Dial Crystal	N25641	
	Pointer Assy.	N25653-1	
	Knob	N25636-4	Off/On Volume, Ivory, Models 2014 & 2016
	Knob	N25636-5	Tone, Ivory, Models 2014 & 2016
	Knob	N25636-6	Tuning, Ivory, Models 2014 & 2016
	Knob	N25636-1	Off/On Volume, Brown, Model 2015
	Knob	N25636-2	Tone, Brown, Model 2015
	Knob	N25636-3	Tuning, Brown, Model 2015



CHASSIS—BOTTOM VIEW



SILVERTONE MODEL 2014 (Ch. 132.021)



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SK7	330KΩ	50Ω	0Ω	1.5Meg	0Ω	†1000Ω	35Ω	†1000Ω
V 2	12SA7	330KΩ	35Ω	†1000Ω ▲	†1000Ω	22KΩ	.6Ω	25Ω	1.5Meg
V 3	12SK7	330KΩ	25Ω	68Ω	1.5Meg	68Ω	†1000Ω	12Ω	†1000Ω
V 4	12SQ7	330KΩ	3.3Meg	0Ω	500KΩ	1.5Meg	†330KΩ	12Ω	0Ω
V 5	35L6GT	INF	80Ω	†120Ω	†1000Ω	500KΩ	INF	50Ω	150Ω
V 6	35Z5GT	INF	110Ω	105Ω	INF	110Ω	1Meg	80Ω	1Meg

† MEASURED FROM PIN 8 OF V6
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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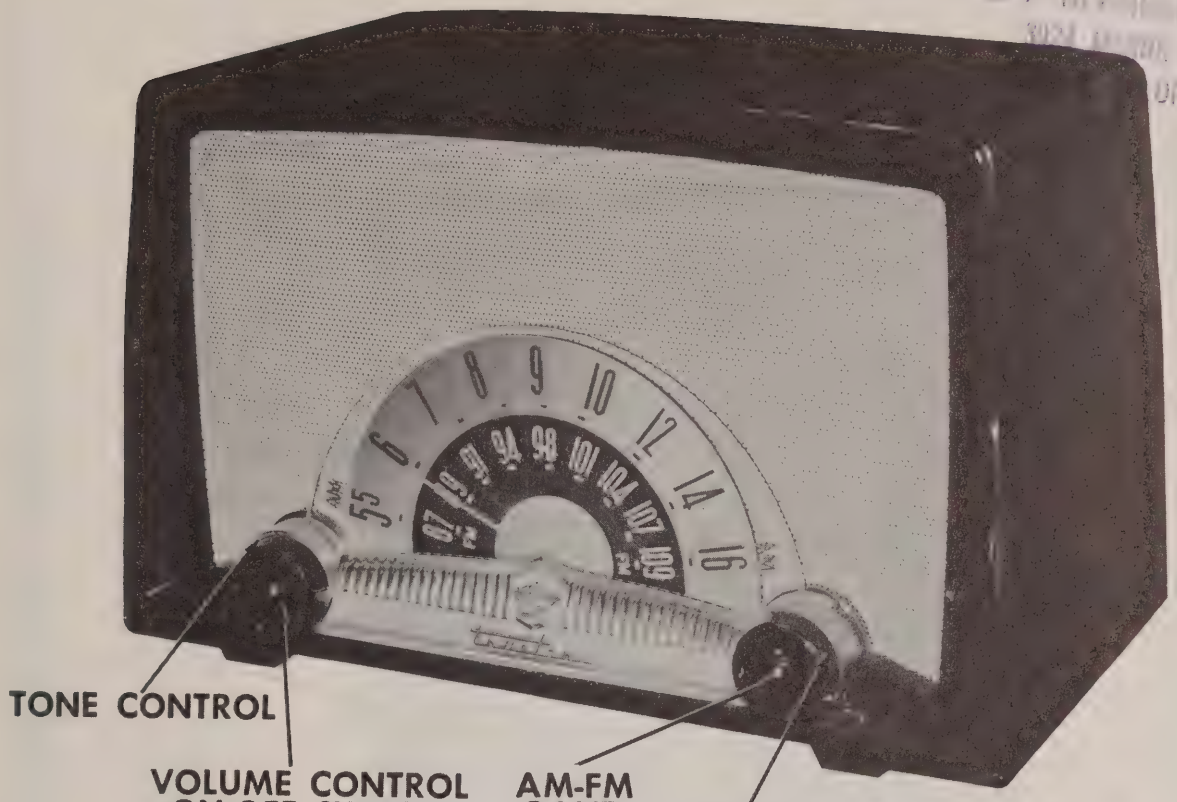
196-15

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY OF
L I [illegible]SHIP
3024 [illegible] ST
[illegible]URADO

TRUETONE
MODEL D2226

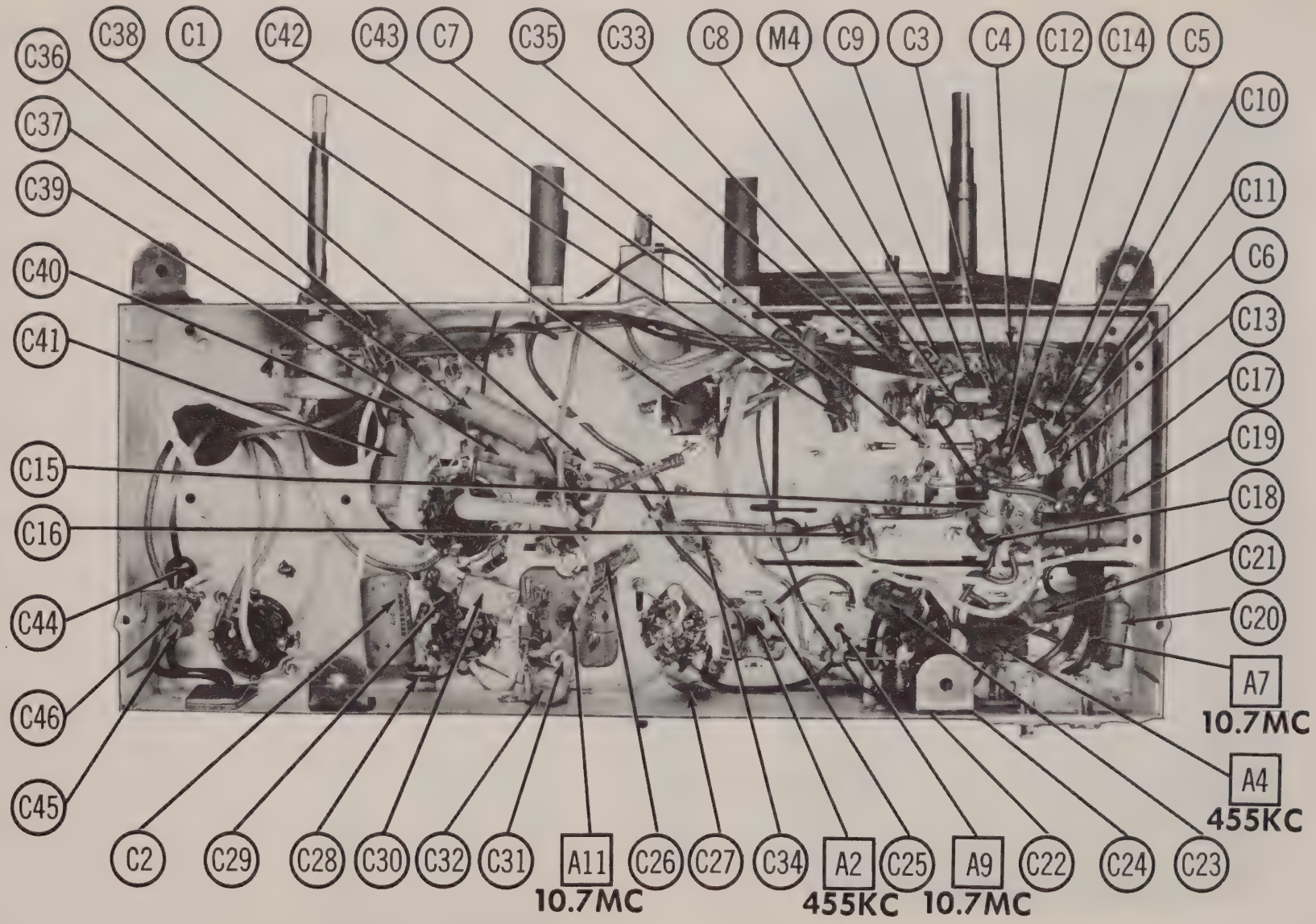


TRUETONE
MODEL D2226

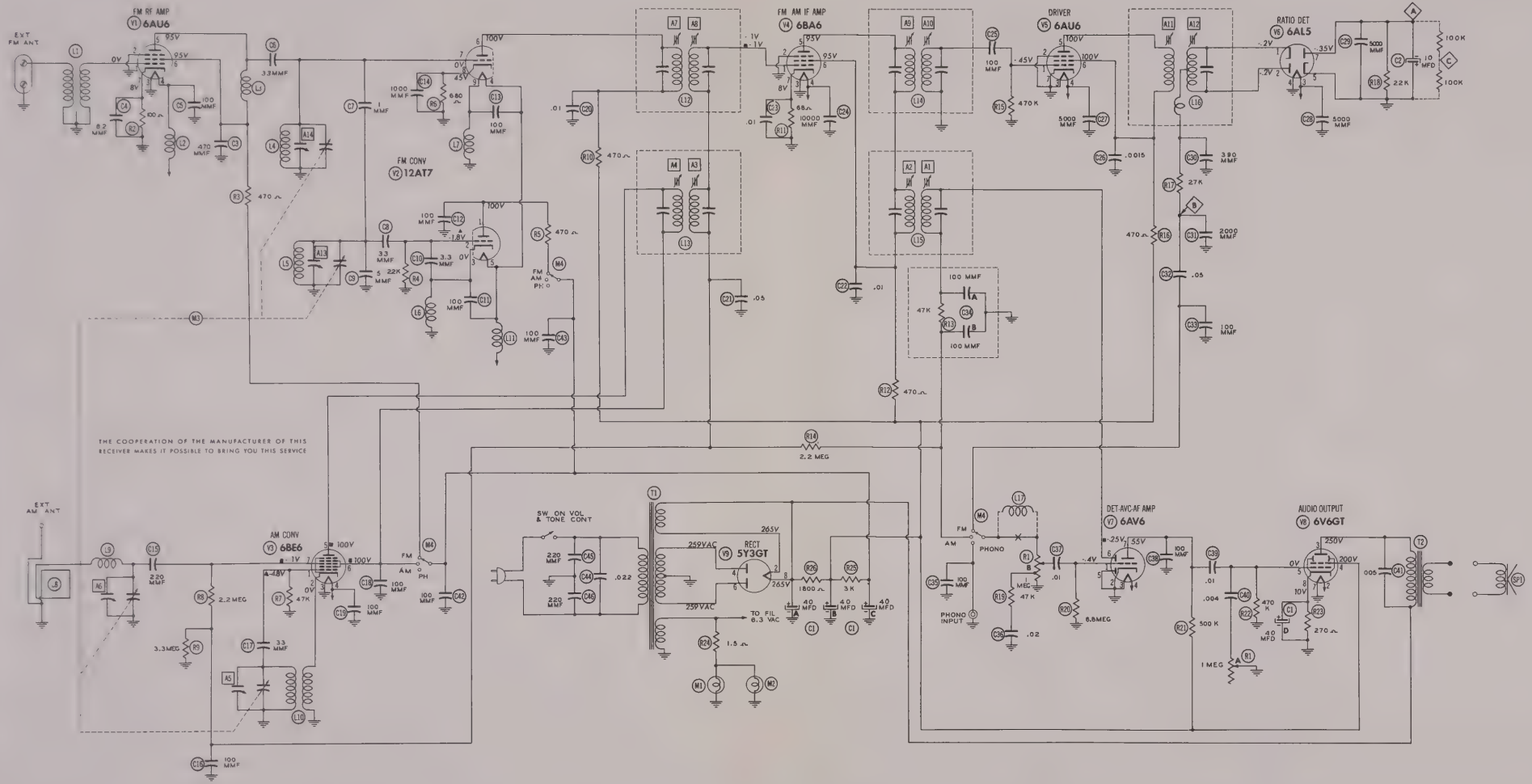
TRADE NAME	Truetone Model D2226
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	AC Operated AM-FM Superheterodyne Receiver
TUBES (Nine)	Types 6AU6 FM RF Amp., 12AT7 FM Conv., 6BE6 AM Conv., 6BA6 FM AM IF Amp., 6AU6 FM Driver, 6AL5 Ratio Det., 6AV6 AM Det-AVC-AF Amp., 6V6GT Audio Output, 5Y3GT Rect.
POWER SUPPLY 110-120 Volts AC-60Cycle	RATING .55 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST 540-1600 KC	FREQ. MOD. 88-108 MC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



IF = 455KC–AM
IF = 10.7 MC–F M

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AU6	0Ω	0Ω	0Ω	.1Ω	†5.3KΩ	†5.3KΩ	100Ω		
V 2	12AT7	†5.3KΩ	22KΩ	0Ω	.1Ω	.1Ω	†2.3KΩ	0Ω	68Ω	0Ω
V 3	6BE6	47KΩ	.2Ω	0Ω	.1Ω	†▪4.8KΩ	†▪4.8KΩ	▪3.9Meg		
V 4	6BA6	3.3Meg ▪1.6Meg	0Ω	0Ω	.1Ω	†2.3KΩ	†2.3KΩ	68Ω		
V 5	6AU6	470KΩ	0Ω	0Ω	.1Ω	†2.3KΩ	†2.3KΩ	0Ω		
V 6	6AL5	INF	INF	.1Ω	0Ω	0Ω	INF	22KΩ		
V 7	6AV6	6.8Meg	0Ω	0Ω	.1Ω	0Ω	▪880KΩ	†500KΩ		
V 8	6V6GT	INF	.1Ω	†485Ω	†1.8KΩ	470KΩ	.2Ω	0Ω	270Ω	
V 9	5Y3GT	INF	3 Meg	INF	132Ω	INF	143Ω	INF	3Meg	

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE SPECIFIED
▪ MEASURED IN "AM" POSITION
▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 8 OF V9

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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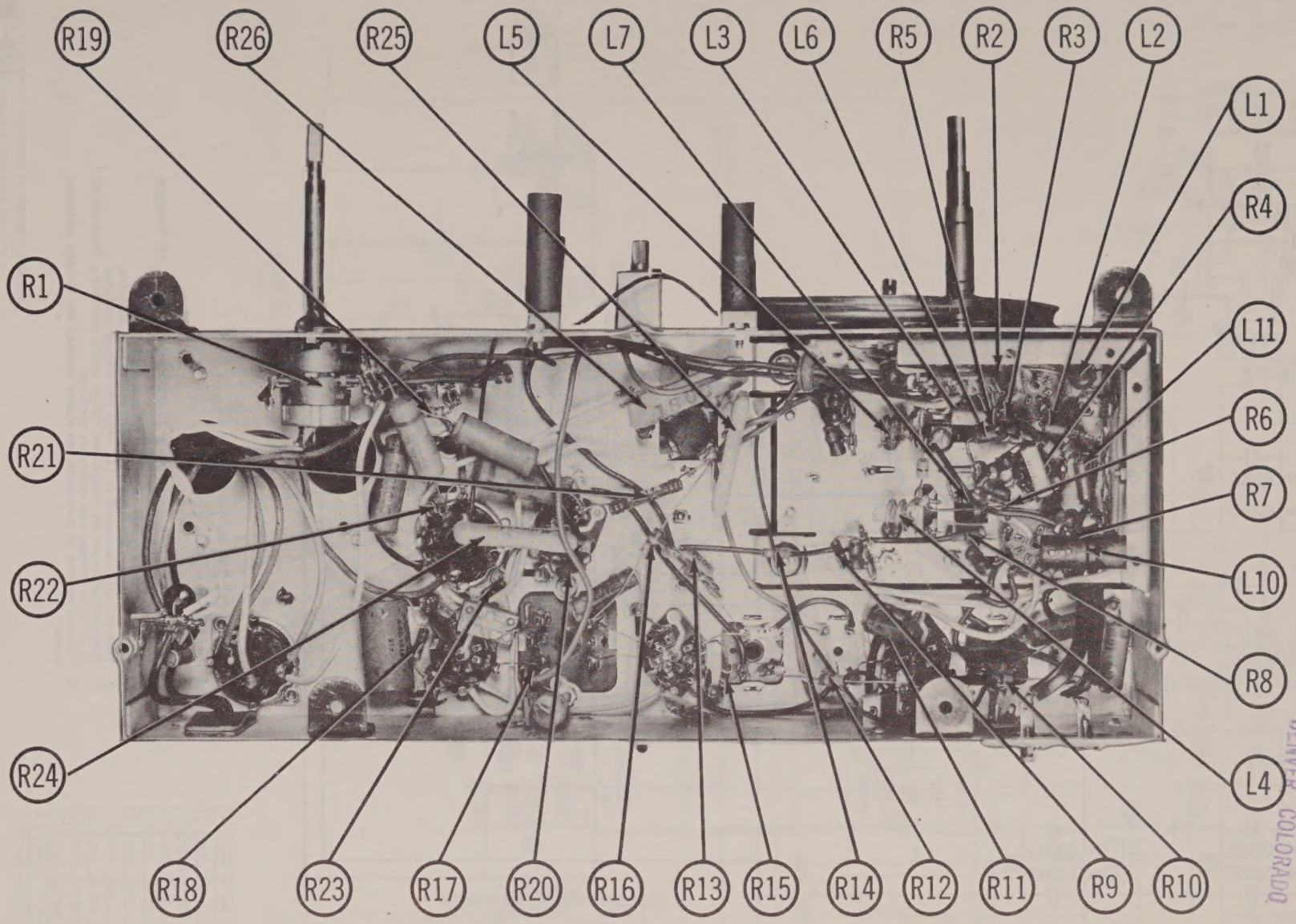
196–16



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER COLORADO

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set tuning gang to any specified frequency during alignment replace chassis in cabinet and turn tuning gang fully closed and set pointer to last index dot on dial back plate at low frequency end of dial. Then turn receiver until pointer coincides with proper index dot, carefully remove pointer without changing tuning gang setting, and remove chassis for alignment. The marks of longer radii from pointer shaft are for AM alignment. The marks of shorter radii are from FM alignment.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
1.	.1MFD	High side to pin 1 (grid) of 6BA6 (V4). Low side to chassis.	455KC (400~Mod)	AM	Tuning gang fully open.	Across voice coil.	A1, A2	Adjust for maximum output.
2.	"	High side to pin 7 (grid) of 6BE6 (V3). Low side to chassis.	"	"	"	"	A3, A4	"
3.	Direct	Loop	1620KC	"	"	"	A5	Adjust for a zero reading. A positive and negative reading will be obtained on either side of the correct setting.
4.	"	"	1400KC	"	1400KC Calibration mark.	"	A6	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point Ⓐ to chassis. The junction of these two resistors is alignment point Ⓒ as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	VTVM	ADJUST	REMARKS
5.	.1MFD	High side to stator of rear FM section of tuning gang. Low side to chassis.	10.7MC (UnMod)	FM	Tuning gang fully open.	DC probe to point Ⓐ, common to chassis.	A7, A8, A9, A10, A11	Adjust for maximum deflection.
6.	"	"	"	"	"	DC probe to point Ⓑ, common to point Ⓒ.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
5.	.1MFD	High side to stator of rear FM section of tuning gang. Low side to chassis.	10.7MC (450KC Swp)	FM	Tuning gang fully open.	Vert. amp to point Ⓐ. Low side to chassis.	A7, A8 A9, A10, A11	Disconnect stabilizer capacitor C2. Adjust for curve of maximum amplitude and symmetry as in Fig. 1.
6.	"	"	"	"	"	Vert. amp to point Ⓑ. Low side to chassis.	A12	Reconnect capacitor C2. Adjust so that 10.7MC occurs at center of crossover lines as in Fig. 2. SLIGHTLY retouch A11 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	270Ω carbon resistor	High side thru 270Ω to left hand FM antenna terminal. Low side to other FM terminal.	108MC (UnMod)	FM	180MC index mark.	DC probe to point Ⓐ, common to chassis.	A13	Adjust for maximum deflection.
8.	"	"	98MC	"	Turn to 98MC signal.	"	A14	"

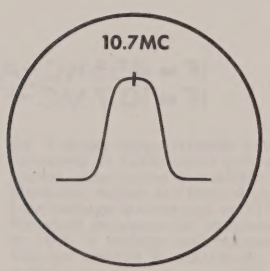


FIG. 1

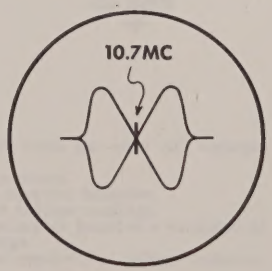


FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		TRUETONE PART No.	STANDARD REPLACEMENT		
V1	FM RF Amplifier	6AU6	6AU6	7BK	
V2	FM Converter	12AT7	12AT7	9A	
V3	AM Converter	6BE6	6BE6	7CH	
V4	FM AM IF Amp.	6BA6	6BA6	7BK	
V5	Driver	6AU6	6AU6	7BK	
V6	Ratio Detector	6AL5	6AL5	6BT	
V7	Det.-AVC-AF Amp.	6AV6	6AV6	7BT	
V8	Audio Output	6V6GT	6V6GT	7S	
V9	Rectifier	5Y3GT	5Y3G T	5T	

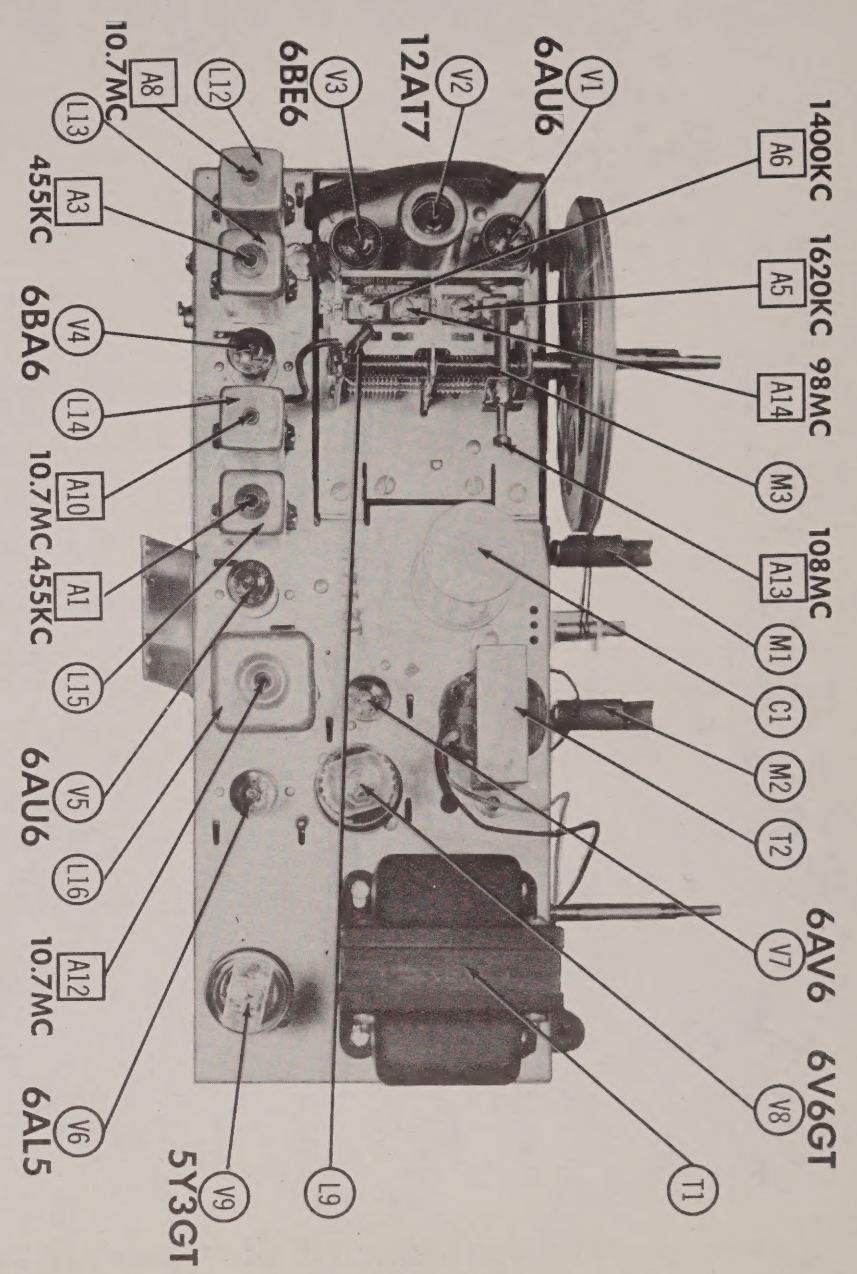
CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▬40	350	8C-18125	AFH4-53		DO46		FP430.6	TVL-4739	
B	■40	350								
C	▲40	350								
D	40	25								
C2	10	50	8D-18128	PRS50/10		BR105		TC32	TVA-1304	
C3	470		8G-20492	BPD-00047	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C4	82		8G-19941	SI82	D6-820		GP1K-820		5GA-Q82	
C5	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C6	33		8G-14172	SI33NP0	TCZ-33		NP0K-330	ZT-5433	5TCC-Q33	
C7	1		8G-12495-2		TCZ-1		NP0K-010		5TCCB-V1	
C8	33		8G-14172	SI33NP0	TCZ-33		NP0K-330	ZT-5433	5TCC-Q33	
C9	5						N330K-050			
C10	3.3		8G-12495-5	SI3.3NP0	TCZ-3.3		NP0K-3R3	ZT-5533	5TCCB-V33	
C11	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C12	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C13	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C14	1000		8G-13201	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C15	220		8G-14459	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C16	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C17	33		8G-14172	SI33NP0	TCZ-33		NP0K-330	ZT-5433	5TCC-Q33	
C18	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C19	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C20	.01	400	8D-17270	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C21	.05	200	8D-17770	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C22	.01	400	8D-17270	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C23	.01	200	8D-17258	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C24	10000		8G-16019	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C25	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C26	.0015	600	8D-19565	P688-0015	D6-152	PTE6D15	GP2L-152	PT6215	6TM-D15	
C27	5000		8G-13962	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C28	5000		8G-13962	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C29	5000		8G-13962	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C30	390	500	8F3-120	1469-0004		5R5T4		MCB243	MS-34	
C31	2000		8G-16049	SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2	
C32	.05	200	8D-14460	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C33	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C34A	100		♦201-15005	SI100	♦PC-50		♦1403-01	UC-531	♦100C1	
B	100			SI100		TM5T1		UC-531		
C35	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C36	.02	200	8D-11304	P288-02	DF-203	PTE4S2		PT412	2TM-S2	
C37	.01	200	8D-11738	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C38	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C39	.01	400	8D-10761	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C40	.004	600	8D-10788	P688-004	D6-402	PTE6D4	GP2-333-402	PT624	6TM-D4	
C41	.005	600	8D-10935	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C42	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C43	100		8G-19862	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C44	.022	600	8J-11321	689ZX-02		PJ6S22		PT6122	6TM-S22	
C45	220		8G-14459	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C46	220		8G-14459	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	

♦ Items C34A, C34B, R13 are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	TRUETONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1Meg	1/2	A-10A-18703	QJ-232 *		SBBT-520-S	UF16A	Tone-Panel
B	1Meg	1/2					UR16-T1253	Volume-Tapped @ 100KΩ-Rear
C	Switch						US-26	Attach to R1B

* CONCENTRIKIT EQUIVALENT- KIT K-2, BASE ELEMENTS & SHAFTS B13-137 & P1-204 (Panel), B18-137X & R2-226 (Rear) & SWITCH 76-1

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	TRUETONE PART No.	IRC PART No.	
R2	100Ω	1/2	9B1-135	BTS-100	
R3	470Ω	1/2	9B1-58	BTS-470	
R4	22KΩ	1/2	9B1-78	BTS-22K	
R5	470Ω	1/2	9B1-58	BTS-470	
R6	680Ω	1/2	9B1-60	BTS-680	
R7	47KΩ	1/2	9B1-82	BTS-47K	
R8	2.2Meg	1/2	9B1-33	BTS-2.2Meg	
R9	3.3Meg	1/2	9B1-34	BTS-3.3Meg	
R10	470Ω	1/2	9B1-58	BTS-470	
R11	68Ω	1/2	9B1-48		
R12	470Ω	1/2	9B1-58	BTS-470	
R13	47KΩ	1/2	♦201-15065	BTS-47K	
R14	2.2Meg	1/2	9B1-33	BTS-2.2Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	TRUETONE PART No.	IRC PART No.	
R15	470KΩ	1/2	9B1-94	BTS-470K	
R16	470Ω	1/2	9B1-58	BTS-470	
R17	27KΩ	1/2	9B1-79	BTS-27K	
R18	22KΩ	1/2	9B1-78	BTS-22K	
R19	47KΩ	1/2	9B1-82	BTS-47K	
R20	6.8Meg	1/2	9B1-36	BTS-6.8Meg	
R21	500KΩ	1/2			
R22	470KΩ	1/2	9B1-94	BTS-470K	
R23	270Ω	1/2	9B1-55	BTS-270	
R24	1.5Ω	5		1-3/4A-1.5	
R25	3000Ω	5	9C12-2059	1-3/4A-3000	
R26	1800Ω	5	9C12-1102	1-3/4A-1750	

♦ Items R13, C34A, C34B are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .55A	518VCT .070ADC	5VAC @ 2A	6.3VAC @ 2.8A	12A18856	PC-8404 ①		R-10A ①	

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	5.2KΩ	3.45Ω	465Ω	.9Ω	12C18143	A-3877 ①	A-2930 ①	RO-9 ①	S-3X ①	① Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	TRUETONE PART No.	VIKING PART No.	QUAM PART No.	
SP1	5"X7"	PM	3.45Ω	18A18857 18A19876 ①	57J9	57A1	① Alternate PM speaker.

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TRUETONE PART No.	MERIT PART No.	
L1	FM Ant. Coil	0Ω	0Ω	201-20407		
L2	Fil. Choke	0Ω		201-20405		
L3	FM RF Choke	.4Ω		201-20402		
L4	FM RF Coil	0Ω		13E-20472		
L5	FM Osc. Coil	0Ω		13D-16617		
L6	FM RF Choke	0Ω		201-20403		
L7	Fil. Choke	0Ω		201-20403		
L8	Loop Ant.	2Ω		13E-21038		
L9	AM Ant. Loading Coil	.2Ω		201-20406		
L10	AM Osc. Coil	.2Ω	5.2Ω	13D-20462	BC-397†	
L11	Fil. Choke	0Ω		201-20403		
L12	1st FM IF	0Ω	1.4Ω	13A-18567	FM-251*	
L13	1st AM IF	12Ω	12Ω	13A-16662	BC-352■	
L14	2nd FM IF	1.4Ω	1.4Ω	13B-18568	FM-251*	
L15	2nd AM IF	12Ω	12Ω	13A-16662	BC-353■	
L16	Ratio Det.	2Ω	.1ΩCT	13M-19356	FM-255■	Tertiary Winding - .25Ω
L17	RF Choke			16A-18676		Not used in all models.

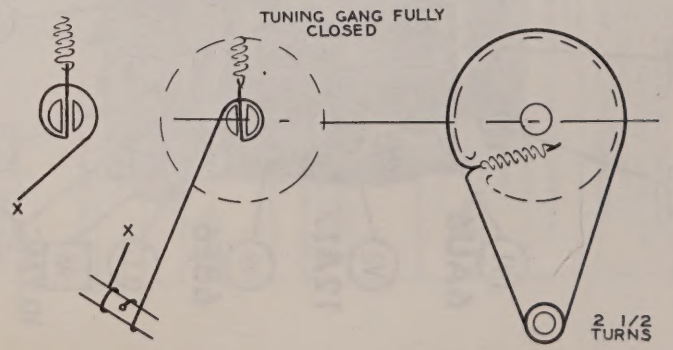
† Drill mounting hole.
* Drill mounting holes.
■ Use adaptor plate.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA TRUETONE PART No.		NOTES
M1	Bayonet	7.5	.2	White	46A-11971		Type No. 51
M2	Bayonet	7.5	.2	White	46A-11971		Type No. 51.

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M3	Tuning Capacitor	8A-20464	26-478MMF, 30-208MMF
M4	Switch	20A-20479	Function Selector
A13	Trimmer Capacitor	201-15142	FM Oscillator
	Cabinet	5C20784-65	
	Escutcheon	5C-20796	
	Grille	23K-20999	
	Pointer	4M-20949	
	Knob	5B-20947-74	Tuning and Tone (2 Used)
	Knob	5B-20945-74	Off/On Volume
	Knob	5B-20944-74	Function Selector



DIAL CORD DRIVE